BEFORE THE
PUBLIC UTILITIES COMMISSION
OF THE
STATE OF CALIFORNIA

Application of Pacific Gas and Electric Company for Authority, Among Other Things, to Increase Rates and Charges for Electric and Gas Service Effective on January 1, 2014. (U39M)	Application 12-11-009 (Filed November 15, 2012)

Direct Testimony of Catherine E. Yap
On Behalf of The Utility Reform Network ("TURN")

May 17, 2013

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1. Introduction and Background

This testimony is presented by Catherine E. Yap on behalf of The Utility Reform Network ("TURN"). Ms. Yap has over 30 years experience preparing and delivering testimony before this Commission as well as in other jurisdictions. Ms. Yap's qualification statement is included as Attachment A to this testimony.

This testimony responds to Pacific Gas and Electric Company's ("PG&E") request for an increase in revenue requirement of $492 million and $504 million through a Post-Test Year ("PTY") or attrition mechanism for years 2015 and 2016, respectively. Assigned Commissioners Ruling and Scoping Memo ("ACR") at 2. The ACR states that "the principal scope of issues of this proceeding revolve around the determination of the extent that the needs and costs identified by PG&E are just and reasonable and should be reflected in retail rates." *Id.* at 3. PG&E claims that its attrition increases are justified not only because of growth in expenses but rapid expansion in rate base. Exhibit PG&E-11, Post Test Year Ratemaking at 1-2. In fact, PG&E requests 2015 plant additions at a level in excess of $3.5 billion for a net increase in ratebase of $1.6 billion. *Id.* This testimony evaluates PG&E's proposed attrition mechanism as well as its basis for projecting plant additions during attrition years.

2. PG&E's Attrition Request

PG&E requests that the Commission adopt an attrition mechanism that explicitly reflects the rate of capital additions that PG&E proposes in its application.

> Rate base growth is the principal driver of the need for attrition year increases. PG&E's has spent and continues to spend substantial sums to upgrade and replace infrastructure needed to provide safe and reliable service. To the extent these capital additions exceed depreciation of existing facilities, rate base is growing and PG&E must effectively raise debt and equity from investors to fund this growth.

Id. at 1-8. PG&E claims that its rate base is expected to grow by $1.6 billion in 2015 under its proposal, that is, "PG&E's capital additions plus cost of removal is forecasted to be roughly $3.7 billion per year in 2015, offset by depreciation of roughly $2.4 billion per year." *Id.* at 1-3.

PG&E proposes that the Commission view the expense- and capital-related attrition distinctly and incorporate a separate mechanism for each. First, PG&E would escalate expenses with "appropriate" escalation rates that reflect inflationary pressure. It proposes to use a series of industry-specific escalators that are tailored to each expense account to determine expense-related attrition. *Id.* at 1-6. Second, PG&E would have the capital-related revenue requirement grow as a direct function of escalated test year rate base with associated return, taxes, and depreciation levels. *Id.* at 1-7. It proposes to escalate capital additions using industry-specific capital escalation factors. *Id.*

3. PG&E Claims that Attrition Based on a Consumer Price Index Escalation of Revenue Requirement Is Insufficient Because of Growth in Rate Base Despite a History of Commission Decisions Employing the Approach in Attrition Mechanisms.

PG&E objects to an attrition mechanism that escalates revenue requirement for attrition years by a percentage based on the Consumer Price Index ("CPI-U") or other index. PG&E claims that such a mechanism will produce an insufficient revenue requirement increase to cover growth in rate base:

> While…TY revenue requirement escalation (at appropriate rates) makes sense for setting funding levels for utility expenses, such as wages, materials, and health care costs (and we continue to propose this as an element of PTYR), escalation is not a prudent method for determining capital revenue requirement increases during the PTY period. Capital revenue requirement changes are determined almost entirely by the relationship between capital additions and depreciation. When capital additions exceed depreciation, rate base and the related capital revenue requirement components increase. This happens irrespective of inflation.

Id. at 1-2. Hence, PG&E proposes a two-part attrition mechanism with one part based on escalation of expenses but the other part based on the revenue requirement consequence of an escalation in test-year plant additions for the attrition years similar to the mechanism adopted in D.06-05-016 for Southern California Edison Company ("SCE").

However, during the last thirteen years, the Commission has adopted numerous attrition mechanisms for PG&E and other utilities that were based on the escalation of revenue requirement by the CPI or other stated factor under conditions of rate base growth that were not materially different from today. In each general rate case filed since 2000, both SCE and PG&E have requested very large increases in authorized capital additions primarily based on a claimed need to "replace aging infrastructure" so as to prevent deterioration in reliable service. Nevertheless, the Commission has also authorized attrition mechanisms linked to the CPI or other fixed escalation indices recognizing that the escalation of revenue requirement by CPI or other index represents a simple, easily understood attrition mechanism.

For example, the Test Year 2007 decision adopted attrition increases in PG&E's revenue requirement that were in excess of projected CPI-U but below projected increases of utility-specific indices. D.07-03-044, slip op. at 247. Similarly, the Test Year 2003 decision adopted an attrition mechanism that increased PG&E's revenue requirement by the CPI-U for the first two attrition years and by CPI-U+1 for the third attrition year. D.04-05-055, slip op. at 24. The Test Year 2011 decision for PG&E adopted fixed increases in revenue requirement for the attrition years. D.11-05-018, slip op. at 18. The Test Year 2004 decision for both Southern California Gas Company ("SoCalGas") and San Diego Gas and Electric Company ("SDG&E") adopted an attrition mechanism that increase revenue requirement for attrition years by CPI-U subject to a floor and ceiling. D.05-03-023, slip op. at 16. The Test Year 2008 decision for both SoCalGas and SDG&E adopted fixed increases in revenue requirement for each utility for the attrition years. D.08-07-046, slip op. at 36. Most recently, the Test Year 2012 decision for both SoCalGas and SDG&E adopted an attrition mechanism that increased revenue requirement for attrition years by CPI-U+75 basis points. D.13-05-010, slip op. at 1010.

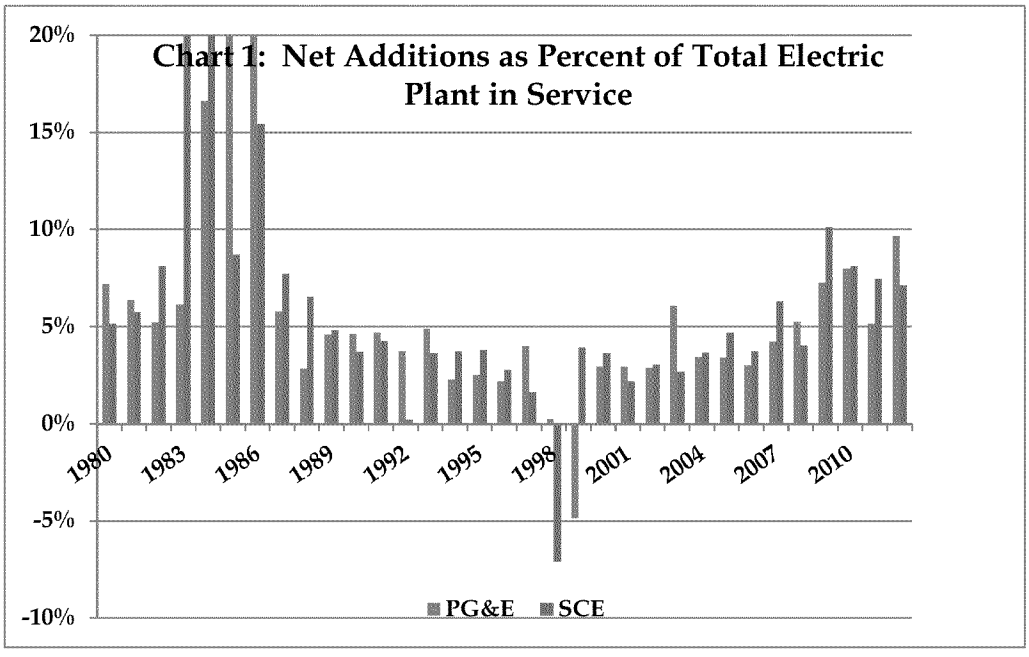
I provide this analysis not because TURN is recommending the use of CPI-U for the entire revenue requirement, but in order to show that the Commission has actually adopted such an approach in the recent past both as part of settlements and litigated outcomes. In this case, TURN

continues to recommend using a CPI-based escalator for the expense component of a two-part attrition mechanism.

4. The Commission Has Previously Considered Capital-Related Attrition Separately from Expense-Related Attrition.

While it is true that D.06-05-016 addressed capital-related attrition separately from expense-related attrition, it is by no means the only decision that has considered attrition from this perspective. In fact, when one considers the entire history of attrition, which goes back to the early 1980s, D.06-05-016 is one of only a few decisions that used escalation in test-year plant additions as the basis for establishing capital attrition. Instead, on far more occasions, the Commission relied on trending of recorded data to establish reasonable levels for attrition-year plant additions.

Chart 1 shows the history of plant additions for PG&E and SCE from 1980 to 2012, which is the period during which the Commission has allowed utilities to receive revenue requirement increases for attrition years between general rate cases.



Source: FERC Form 1, PG&E and SCE, Years 1980-2012, Electric Plant in Service.

As the chart makes clear, in percentage terms, the level of plant additions experienced during much of the last decade is not materially different than the level of increases experienced during the 1980s, excluding the years where the nuclear plants were brought on line. During the 1980s and early 1990s, the Commission regularly used average historical plant excluding major plant additions as the basis for determining the capital portion of the two-part attrition mechanism. *See*, D.82-12-055, D.83-12-068, D.85-12-076, D.92-12-057, and D.94-08-023. Ratemaking for major additions, *e.g.*, nuclear generating plants, was handled separately from the attrition mechanism.

A series of more recent decisions addressing attrition for PG&E, namely, D.00-02-046, D.02-02-043, and D.04-05-055 are particularly noteworthy as they each evaluated a proposed attrition mechanism in light of the Commission's historic policies as well as the current context. While, as noted above, D.04-05-055 ultimately adopted an attrition increase of PG&E's revenue requirement based on the CPI-U, the decision also provides a clear discussion and a historical context for the Commission's consideration of the attrition mechanism:

> Attrition is the year-to-year decline in a utility's earnings caused by increased costs that are not offset by increased rates or sales. In order to protect utility shareholders from the effects of attrition to some extent, the Commission has adopted a ratemaking mechanism called the Attrition Rate Adjustment (ARA). The ARA mechanism was designed to 'provide utilities with the reasonable opportunity of achieving their authorized rates of return during years in which they are not permitted under the Commission's rate case plan procedures to file for general rate relief but in which they still face volatile economic conditions.' (D.85-12-076, Finding of Fact 1, 9 CPUC 2d 453,476.)
>
> The traditional attrition mechanism provides for an advice letter filing, just prior to the attrition year, by the utility seeking increased rates based on the escalation of adopted TY GRC expense and rate base. A seven-year average of plant additions is used to account for rate base growth during the attrition period. The escalation rates are conventional indices such as the U.S. Department of Labor, Bureau of Labor Statistics' CPI, and DRI.

D.04-05-055, slip op. at 26-27. Similarly, in D.00-02-046, which addressed PG&E's Test Year 1999 general rate case, the Commission discussed attrition in a historical context as well as then current events:

> In D.96-01-011, in Edison's 1995 GRC, the Commission considered an ARA mechanism proposal by Edison. In denying an attrition mechanism, the Commission made it clear that there is no inalienable right to an interim increase in rates during a multi-year rate case cycle. The Commission determined that denial of Edison's ARA proposal did not deprive Edison of an opportunity to earn its authorized rate of return, holding that:
>
> > 'Neither the constitution nor case law has ever required automatic rate increases between general rate case applications. Attrition year adjustments are a relatively recent innovation and they are more recent than the cases cited to by Edison in support of maintaining the current attrition mechanism.' (Id., 374.)
>
> More recently, in considering PG&E's 1996 request for a waiver of the three-year rate case plan and increases in base revenues, we observed that attrition mechanisms represent an exception to the general strategy of examining one test year out of every three years and providing the utility an incentive to improve its productivity, and that attrition adjustments were allowed in years when inflation was high. (See Re Pacific Gas and Electric Company (1996) 69 CPUC2d 691, 695.)

D.00-02-046, slip op. at 471-472. In fact, the Commission approved only part of PG&E's request for an attrition mechanism in that proceeding, stating: "The attrition year 2000 proposal is denied. The attrition year 2001 proposal is granted to the extent that PG&E may file for an attrition year 2001 adjustment as proposed, with the caveat that the ratebase component may be modified to reflect the results of the audit of 1999 distribution capital spending." *Id.* at 473.

In D.02-02-043, the Commission addressed PG&E's request for the 2001 attrition adjustment considering expense-related attrition separately from capital-related attrition. The Commission escalated TY99 expenses for 2001 and allowed for capital-related attrition:

> ORA and PG&E both use a rate base calculation methodology consistent with the methodology used in the last two PG&E GRC proceedings in which attrition was approved. This methodology limits capital-related increases in an attrition year to increases in plant, depreciation reserve, and deferred tax items that are caused by rate base growth. The plant growth projection is based upon a seven-year average.

D.02-02-043, slip op. at 18.

Clearly, while the Commission has at times denied PG&E attrition relief, the Commission has also allowed it on numerous occasions. When based on a two-part mechanism, traditional

attrition adjustments for PG&E were derived from a combination of expense escalation using broad indices and capital-related cost increases. As described in these recent PG&E decisions on attrition, increases in capital-related revenue requirement were based on rate base growth as projected using seven-year averages of recorded data.

5. The Commission Should Reject PG&E's Attrition Proposal and Adopt an Attrition Mechanism Based on the Commission's Historical Approach to Attrition for PG&E.

As discussed previously, PG&E requests that the Commission adopt an attrition mechanism that derives expense-related attrition separately from capital-related attrition. As I have explained above, the Commission has previously used a two-part mechanism for developing attrition during periods of increasing rate base. However, there are a number of problems with PG&E's proposed attrition mechanism.

First, PG&E proposes to use a series of PG&E-specific indices for escalating its test-year expense levels instead of proposing the "conventional indices such as the U.S. Department of Labor, Bureau of Labor Statistics' CPI," referenced in D.04-05-055. Exhibit PG&E-11 at 2-2, 2-3. PG&E proposes to use the same indices that would be used in developing the test-year expense estimates albeit for different years. *Id.* The Commission should not use industry-specific indices in designing the attrition mechanism but should use a broad index in order to provide appropriate incentives for utility efficiency between test years.

Second, PG&E proposes to base the capital-related attrition on the revenue requirement associated with a projected level of rate base during the attrition period. *Id.* at 3-1. PG&E proposes to determine the level of rate base during the attrition period by escalating the test-year level of rate base by fixed factors that are based on a combination of PG&E-specific capital cost indices. *Id.* at 3-3. The Commission should not use PG&E's proposed method for determining rate base during the attrition period but instead should employ the seven-year averaging method that it has used previously. A seven-year average using 2005-2011 recorded data provides a reasonable attrition forecast and includes years with levels of plant additions that are reasonably comparable to prevailing levels when the Commission historically used this method.

5.1. The Commission Should Not Use Company or Utility Industry Specific Indices to Escalate Expenses During Attrition Periods.

As the Commission has previously recognized, it is important for the utilities to be challenged to harness productivity and to "stretch" to manage utility operations as efficiently as possible. The Commission has repeatedly considered the need to balance protection for the utilities against attrition with the importance of maintaining downward pressure on utility costs. As the Commission noted in an early attrition decision:

> Finally, we should point out that the attrition allowance is not intended to cover every conceivable area where the utility can foresee possibility of an increase from the test year. It is only intended as a reasonable allowance to get by in the second year of rate life. If productivity increases do not offset increases in expenditures, we suggest that the utility pull-in its corporate belt a notch tighter.

D.83-12-068, 1983 Cal. PUC LEXIS 1156 (December 22, 1983) at *136-137.

Comparing the utility to itself or to similarly situated businesses reduces the pressure on the utility to stretch. In fact, if the indices are fashioned too narrowly, the attrition simply becomes a self-fulfilling prophecy where the more the utility expends, the more will be passed along in the future. The Commission recognized this potential pitfall in considering the PBR mechanisms in the mid-1990s, which were alternate forms of the attrition mechanism. Under PBR, the Commission adopted broad measures of inflation so that the utility was immersed in the broad competitive market:

> To make this update of utility rates independent of the utility's costs, the price and productivity values should come from national or industry measures and not from the utility itself. The independence of the update rule from the utility's own costs allows PBR regulation to resemble the unregulated market where the firm faces market prices which develop independently of its own cost and productivity. In contrast, traditional regulation often updates rates through a review of the utility's own costs and productivity.
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> …
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> Thus, we see PBR as emulating the competitive process to encourage utility management to make decisions which resemble an efficient or competitive outcome. An efficient utility will control rates which benefits ratepayers.

D.97-07-054 1997 Cal. PUC LEXIS 751; 179 P.U.R.4th 237 (July 16, 1997) at *30, *33. Under PBR, the Commission also adopted explicit productivity and stretch factors, revenue sharing mechanisms, and allowed the periods between rate cases to increase substantially, which I am not proposing to apply in this proceeding.

While the Commission should seek to make the estimate of test-year expenses as accurate as possible using specific information about PG&E's costs, the attrition adjustments should be designed differently. The Commission should devise an attrition mechanism that enhances management incentives to develop savings. Using a broad index such as CPI-U or the Producers Price Index ("PPI") instead of the utility specific indices would provide some implicit stretch factors. The broader indices have an additional advantage of being simple and easy to verify, which meets the Commission's long-stated desire to keep the attrition mechanism as simple as possible. Thus, using the broad index allows the utility a reasonable opportunity to earn its rate of return while maintaining downward pressure on rates. This compromise provides the proper impetus for management to maximize efficiency and effectiveness as previously recognized by the Commission:

> Ratemaking is not, nor has it ever been, an exact science that guarantees perfect results from all perspectives. Ratemaking, whether in a general rate proceeding or by an attrition mechanism, is essentially the art of estimating future events based on judgment that is as fully informed as possible. We know in prospective test year ratemaking that our adopted estimates of revenues and expenses may be at variance with actual hindsight experience. But we do not view this as a problem, because we are extending to utility management an opportunity and incentive to find ways to conduct operations for less than projected. When it can do this it flows the benefit to the utilities [sic] bottom line, which means profit. In the short term, between general rate proceedings, the shareholders benefit when the company's management can 'do it for less,' and correspondingly, ratepayers ultimately benefit [*56] because the productivity improvement will be reflected periodically when there is a comprehensive review of the utility's revenue requirement.

D.85-12-076 1985 Cal. PUC LEXIS 1116; 19 CPUC2d 453 (December 18, 1985). Therefore, the Commission should deny PG&E's proposal to escalate test-year expense levels using utility-

specific escalators and instead use either the CPI-U or the PPI to escalate test-year expenses during the attrition period.

TURN recommends determining attrition-year expense levels by using the CPI-U to escalate TURN's test-year expense levels. However, because of timing issues, TURN has used DRA's test-year expense levels as a proxy to illustrate its recommendation in Tables 1, 2 and 3 below. TURN has used the forecast of CPI-U developed by IHS Global in their fourth quarter 2012 publication, IHS Global Insight Cost Planner, to escalate the test-year expense levels. Exhibit DRA-22, Appendix 1. As noted previously, TURN's recommended development of attrition expenses in its two-part attrition mechanism is parallel to the expense portion of DRA's primary recommendation, which develops the attrition revenue requirement by escalating test-year revenue requirement by the CPI-U. Thus, the illustrative TURN attrition expense calculations are identical to DRA's primary recommendation. TURN will file errata for Tables 1, 2 and 3 to reflect TURN's test-year expense recommendations in combination with DRA's recommendations.

TURN has made two adjustments to the electric generation test-year expenses that affect the attrition calculations. First, Mr. Marcus proposes to include the full cost of the second 2014 refueling of Diablo Canyon in test year rates. Second, because of this, the second refueling cost ($47,376,000 per TURN) has been deducted from TURN's test-year electric generation production costs before escalating those test year costs because neither of the attrition years will have a second refueling. The treatment of the refueling expense for Diablo Canyon is discussed more fully in Mr. Marcus' testimony.

A comparison of the 2015 and 2016 attrition-year expense levels as recommended by TURN, DRA-primary, DRA-secondary, and PG&E is presented below in Tables 1, 2, and 3 for Electric Distribution, Gas Distribution, and Electric Generation, respectively.

Table 1

Comparison of TURN, DRA & PG&E Proposed Electric Distribution Expenses

$000	2015 Attrition Year				2016 Attrition Year			
	TURN	DRA-Prim /1	DRA-Secd/2	PG&E /3	TURN	DRA-Prim /1	DRA-Secd/2	PG&E /3
OPERATING EXPENSES:								
Energy Costs	-	-		-	-	-		-
Production	-	-		-	-	-		-
Storage	-	-		-	-	-		-
Transmission	1,051	1,051	1,062	1,065	1,071	1,071	1,086	1,090
Distribution	523,948	523,948	528,097	644,245	533,744	533,744	540,109	659,360
Customer Accounts	117,090	117,090	118,370	204,752	119,279	119,279	121,642	210,932
Uncollectibles	13,691	13,691	15,319	17,336	13,946	13,946	15,871	18,247
Customer Services	601	601	608	3,906	612	612	625	4,024
Administrative and General	412,123	412,123	419,800	507,213	419,828	419,828	434,808	525,374
Franchise Requirements	30,961	30,961	31,903	39,205	31,539	31,539	33,052	41,266
Amortization	59,761	59,761	64,374	64,374	60,878	60,878	70,514	70,514
Other Adjustments	(5,390)	(5,390)	(5,390)	(2,728)	(11,530)	(11,530)	(11,530)	(8,868)
Total Expenses:	1,153,836	1,153,836	1,174,144	1,479,367	1,169,368	1,169,368	1,206,177	1,521,940

/1 DRA's primary recommendation. DRA-2 at 8; DRA-11 at App 1
/2 DRA's secondary recommendation DRA-2 at 8; DRA-22 at 4
/3 PG&E-11, WP-12

Table 2

Comparison of TURN, DRA & PG&E Proposed Gas Distribution Expenses

$000	2015 Attrition Year				2016 Attrition Year			
	TURN	DRA-Prim /1	DRA-Secd/2	PG&E /3	TURN	DRA-Prim /1	DRA-Secd/2	PG&E /3
OPERATING EXPENSES:								
Energy Costs	-	-		-	-	-		-
Procurement	2,943	2,943	2,967	4,695	2,998	2,998	3,041	4,820
Storage	-	-	-	-	-	-	-	-
Transmission	-	-	-	-	-	-	-	-
Distribution	253,043	253,043	301,673	466,966	257,774	257,774	320,156	489,584
Customer Accounts	112,431	112,431	113,664	157,220	114,533	114,533	116,808	161,965
Uncollectibles	5,163	5,163	5,733	7,327	5,259	5,259	6,034	7,905
Customer Services	2,717	2,717	2,751	2,945	2,768	2,768	2,831	3,035
Administrative and General	221,297	221,297	232,126	279,064	225,434	225,434	242,020	290,676
Franchise Requirements	19,225	19,225	20,438	27,287	19,585	19,585	21,511	29,441
Amortization	-	-	-	-	-	-	-	-
Other Adjustments	(7,168)	(7,168)	(7,168)	(9,287)	(7,168)	(7,168)	(7,168)	(9,287)
Total Expenses:	609,652	609,652	672,184	936,216	621,183	621,183	705,233	978,137

/1 DRA's primary recommendation. DRA-2 at 9; DRA-22 at App 1
/2 DRA's secondary recommendation DRA-2 at 9; DRA-22 at 4
/3 PG&E-11, WP-12

Table 3

Comparison of TURN, DRA & PG&E Proposed Electric Generation Expenses

$000	2015 Attrition Year				2016 Attrition Year			
	TURN	DRA-Prim /1	DRA-Secd/2	PG&E /3	TURN	DRA-Prim /1	DRA-Secd/2	PG&E /3
OPERATING EXPENSES:								
Energy Costs	-	-	-	-	-	-	-	-
Production	467,494	467,494	471,576	647,350	476,234	476,234	482,219	662,345
Storage	-	-	-	-	-	-	-	-
Transmission	4,183	4,183	4,225	4,237	4,261	4,261	4,321	4,337
Distribution	-	-	-	-	-	-	-	-
Customer Accounts	-	-	-	-	-	-	-	-
Uncollectibles	6,059	6,059	6,147	7,527	6,172	6,172	6,412	7,890
Customer Services	-	-	-	-	-	-	-	-
Administrative and General	232,598	232,598	236,932	286,267	236,947	236,947	245,402	296,517
Franchise Requirements	13,701	13,701	12,801	17,022	13,957	13,957	13,353	17,843
Amortization	210	210	207	207	214	214	207	207
Other Adjustments	(147,275)	(147,275)	(147,275)	(144,607)	(147,275)	(147,275)	(147,275)	(144,607)
Total Expenses:	576,970	576,970	584,613	818,003	590,510	590,510	604,639	844,531

/1 DRA's primary recommendation. DRA-2 at 12; DRA-22 at App 1
/2 DRA's secondary recommendation DRA-2 at 12; DRA-22 at 4
/3 PG&E-11, WP-24

5.2. The Commission Should Not Use Company or Utility Industry Specific Indices to Escalate Plant Additions During Attrition Periods.

As noted previously, the Commission has generally used long-term averages of recorded plant additions as the basis for determining the appropriate level of plant additions during attrition periods. In particular, the Commission has used seven-year averages of plant additions to determine PG&E's plant growth in attrition proceedings. The Commission should deny PG&E's proposal to change methods.

PG&E has proposed very large increases in plant additions for the test year and each of the attrition years. The test year additions have been scrutinized by DRA in its showing but the attrition year additions generally have not. PG&E proposes to simply escalate the test-year plant additions as a measure of the attrition-year plant additions, but the test year is only one point in time and is not based on recorded data. Instead, test-year plant additions are projected based on trended and escalated costs. PG&E proposes to further escalate the test-year plant additions, which seriously risks over estimating these expenditures. Instead, as the Commission has already recognized, it is more reliable to use a long-term average of recorded costs as the basis of the attrition year expenditures.

TURN has developed a seven-year average of plant additions in 2012 dollars based on recorded data for the years 2005-2011 from PG&E's workpapers in this general rate case and the previous general rate case. See, Attachments B-D. The seven-year average has been escalated at projected CPI-U to 2015 and 2016 attrition year levels using the IHS Global Insight Cost Planner forecast from fourth quarter 2012. Exhibit DRA-22, Appendix 1.

Recorded levels for the construction of the three fossil generation plants, namely, Gateway, Colusa, and Humboldt Bay Generating Stations, have been excluded from this analysis because these fossil plants have been finished and have each achieved commercial operation during the 2010-2011 period. Exhibit PG&E-6 at 4-18, 4-20, 4-21. *See* also Attachment E: A.09-12-020, Exhibit PG&E-5 at 5-3 to 5-5. Thus, construction of these plants is not an attrition activity. Furthermore, the dollar levels associated with the construction of the three generating stations are very large and would have been suitable for exclusion from the averaging method as major additions in any case. D.85-12-076, 1985 Cal. PUC LEXIS 1116; 19 CPUC2d 453 (December 1985) at *67.

Similarly, the capital costs for hydro relicensing have been excluded from this analysis because licenses are expected to be issued during the test year for several projects that are currently going through the relicensing process. Thus, the large costs associated with hydro relicensing for these dams should not be carried forward into the attrition year. Any relicensed projects that go into service after the test year that are not included in test year rates should be included as adders, like the Gas Accord process, being placed into rates the year after they go into service based on PG&E's forecasted costs. Additional details regarding test-year hydro-relicensing capital costs are provided in Mr. Marcus' testimony.

Table 4 shows a comparison of TURN, DRA-secondary, and PG&E recommended levels for the plant additions during the attrition years. It should be noted that this table does not show DRA's primary recommendation since that is based on an escalation of test-year revenue requirement rather than a proposed level of plant additions.

Table 4
Comparison of TURN, DRA & PG&E Proposed Capital Attrition
$000

	2015 Attrition Year Weighted Average Net Additions to Plant			2016 Attrition Year Weighted Average Net Additions to Plant		
	TURN	DRA /1	PG&E /2	TURN	DRA /1	PG&E /2
Electric Distribution	542,706	550,195	725,861	549,492	565,601	746,240
Electric Generation	131,689	172,638	203,385	129,753	176,091	207,456
Gas Distribution	160,706	224,212	391,203	162,646	230,041	401,508

/1 DRA Secondary proposal, Ex DRA-22 at 24; Ex DRA-21 at 3; Ex PG&E-11, WP-35
/2 Ex PG&E-11, WP-11, WP-22, WP-34

Finally, TURN has used PG&E's results of operation ("RO") model to develop estimates of revenue requirement associated with TURN's recommended attrition mechanism. For completeness, TURN has also used PG&E's RO model to make estimates of the attrition revenue requirement for DRA's secondary proposal. Table 5 shows a comparison of the 2015 and 2016 attrition-year revenue requirement increase associated with the attrition mechanisms described by TURN, DRA-primary, DRA-secondary, and PG&E.

Table 5
Comparison of TURN, DRA & PG&E Attrition Revenue Requirement

$000	2015 Attrition Year				2016 Attrition Year			
	TURN	DRA-Prim /1	DRA-Secd/2	PG&E /3	TURN	DRA-Prim /1	DRA-Secd/2	PG&E /3
Electric Distribution	119,290	80,573	132,782	234,423	139,257	82,426	148,960	245,948
Electric Generation	31,352	51,222	46,283	71,119	44,292	38,846	71,503	97,981
Gas Distribution	89,880	36,570	108,158	186,857	52,050	37,411	83,034	159,584
Total	240,523	168,365	287,223	492,399	235,598	158,683	303,497	503,513

/1 DRA's primary recommendation. DRA-22 at 3
/2 DRA's secondary recommendation per RO model
/3 PG&E-11 at 2-7

Attachment A: Qualifications of Catherine E. Yap

Attachment A
Qualifications of Catherine E. Yap

Q1. Please state your name and business address.

A1. My name is Catherine E. Yap and my address is Barkovich & Yap, Inc., P.O. Box 11031, Oakland, California 94611.

Q2. Please state your qualifications to offer this testimony.

A2. I am a principal in the firm of Barkovich & Yap, Inc., and have been consulting in the utility regulatory area for over twenty-five years. During this time, I have directed and/or performed major examinations of cost-of-service requirements, allocation, rate design, and customer bill effects for electric, natural gas, water, and solid waste utilities. I have testified on numerous occasions before the California Public Utilities Commission ("Commission") and in civil proceedings. I have consulted internationally on issues related to natural gas industry structure and marginal cost allocation and rate design.

Prior to this, I was employed for nine years by the Commission. Most recently, I was responsible for managing the Energy Rate Design and Economics Branch of the Public Staff Division ("PSD"). This branch was responsible for developing cost of service, rate design, and economic studies, such as sales forecasting and productivity assessment, for both electric and gas utilities. Members of the branch were responsible for presenting expert testimony, developing cost of service studies, and designing unbundled rates for the natural gas utilities during the Commission's extensive hearings on gas industry structure and rate design implementation. During this time, I participated extensively in the formulation of policy regarding the appropriate structure for the natural gas industry in California.

Previously, I was the Supervisor of the Gas Supply and Requirements Section of the Fuels Branch of the PSD. I was responsible for directing, and in some cases performing, advanced technical studies that evaluated California gas utility operations and associated contracts, investments, and expenses. I also acted as the highest level technical representative of the CPUC on natural gas matters and was involved in numerous negotiated settlements involving natural gas pipelines, distribution utilities, producers, and state and federal regulatory agencies.

Prior to that, I was a staff economist in the Policy Division acting as a consultant to the Executive Director and to various Commissioners. I also testified on numerous occasions as an expert witness regarding a variety of technical, economic, and financial matters related to electric and natural gas utilities.

I have a B.A. in chemical physics from the University of California at Santa Cruz, and a M.S. in Energy and Resources from the University of California at Berkeley. I have also taken course work in finance, accounting, and organization theory from the University of California, Extension, and Golden Gate University.

Attachment B: Summary of Recorded Data by MWC

Total annual recorded plant additions by MWC number

Row Labels	Values Sum of 2005	Sum of 2006	Sum of 2007	Sum of 2008	Sum of 2009	Sum of 2010	Sum of 2011
MWC 1	1,221	2,503	0	0	2	173	400
MWC 3	160	212	150	402	171	206	228
MWC 4	32,574	64,586	104,322	52,972	66,559	63,502	76,555
MWC 5	657	1,626	3,890	3,677	1,981	3,923	5,923
MWC 6	39,639	70,234	75,102	88,685	83,230	81,378	101,353
MWC 7	40,134	37,772	28,775	33,272	34,319	44,540	89,113
MWC 8	9,840	13,054	11,054	9,845	9,311	21,491	86,334
MWC 9	4,605	4,895	8,737	8,605	8,188	7,882	22,057
MWC 10	31,314	45,204	50,353	50,910	65,853	64,974	84,500
MWC 11	25,087	18,638	23,469	30,545	50,299	61,698	30,707
MWC 12	5,153	6,362	5,333	6,654	10,164	11,042	11,691
MWC 14	46,968	60,168	76,916	105,603	99,470	102,063	127,010
MWC 16	241,362	258,865	298,343	278,908	263,648	180,960	211,699
MWC 17	66,428	77,318	80,700	97,711	110,961	111,601	115,645
MWC 20	146,263	185,632	241,567	363,476	305,279	173,555	230,821
MWC 21			998	765	610	405	4,773
MWC 22			27,302	37,064	36,222	41,522	34,217
MWC 23			2,077	7,187	418	14,744	6,509
MWC 25	32,007	30,563	33,037	34,256	23,291	23,708	32,120
MWC 27	33	0	15	73	17	15	9
MWC 28			0	0	0	0	216
MWC 29	75,641	75,522	67,925	46,375	39,825	23,627	32,078
MWC 30	41,998	68,357	45,385	39,916	41,142	36,610	33,628
MWC 31	1,662	1,782	3,612	4,300	3,166	2,547	1,443
MWC 46	34,800	52,628	73,271	106,567	95,239	63,362	97,085
MWC 47	9,063	11,599	8,143	12,062	8,384	14,893	12,521
MWC 48	15,905	20,592	16,994	28,579	29,767	26,304	49,179
MWC 49	6,966	12,139	21,896	29,910	31,732	81,776	71,067
MWC 50	11,307	12,128	10,961	14,954	29,495	33,394	58,512
MWC 51	14,353	19,516	15,870	26,294	25,716	37,063	50,847
MWC 52	95	286	256	375	251	600	509
MWC 54	14,058	17,094	33,039	46,724	52,335	38,336	46,138
MWC 56	35,102	33,209	30,055	22,084	17,437	37,430	55,821
MWC 58	3,370	2,209	3,341	1,997	788	499	1,152
MWC 59	22,165	28,182	32,945	33,067	34,677	40,986	40,942
MWC 63	0	0	0	0	0	4,832	1,863

Mismatch between MWC 12 here and in GRC11-MDR-9-002 due to MWC 12 activities on transmission facilities.

MWC 74	33,492	30,547	29,444	33,160	47,011	63,979	67,889	
MWC 78	0	19	951	3,230	1,813	1,222	3,997	
MWC 85	62,077	92,032	841	68	-907	15	3	
MWC 95	15,071	58,140	26,186	46,158	41,272	64,085	86,912	MWC 85 was switched to MWC 2F in 2014GRC
MWC 97	15,269	118,207	213,440	252,621	517,013	508,778	158,390	
MWC 2A	45,838	53,608	54,880	57,752	59,518	69,125	93,980	
MWC 2B	15,753	18,288	17,260	15,807	17,841	17,190	31,440	
MWC 2C	0	0	658	4,477	4,128	8,037	18,460	
MWC 2F			28,777	79,337	80,026	132,634	112,591	MWC 2F was previously 53, 77, 80, 85
MWC 2K			0	0	293	1,220	19,648	
MWC 2L	8,646	11,071	6,945	18,857	20,258	34,902	86,207	
MWC 2M			33,701	34,798	34,862	45,840	68,520	
MWC 2N			8,767	18,422	23,137	22,150	43,645	
MWC 2P			591	4,424	2,169	2,612	4,531	
MWC 2Q			0	0	8	-8	0	
MWC 2R			0	0	98	327	431	
MWC 2S			588	867	914	514	3,179	
MWC 2T			0	0	0	0	371	
MWC 2U			135,764	479,847	391,617	283,871	11,420	
MWC 3A			0	0	0	0	0	
MWC 3B			0	0	0	0	282	
MWC 3D			0	0	10,266	7,643	13,387	
MWC (blank)								
MWC 81	41,006	50,056	179,451	538,339				MWC 81 appears to match 2M through 2U based on discussion in e
MWC 53	10,927	95,684						Values for 2007 & 2008 are from the 2011 GRC data not the 2014 G
MWC 77	4,172	1,320						MWC 53 was switched to MWC 2F in 2014GRC
MWC 80	537	293						MWC 77 was switched to MWC 2F in 2014GRC
Grand Total	**1,262,721**	**1,762,141**	**2,174,078**	**3,211,982**	**2,831,284**	**2,715,777**	**2,649,944**	MWC 80 was switched to MWC 2F in 2014GRC

exhibits
GRC data

Attachment C: Recorded Data from 2014 GRC Workpapers

2014 GRC
A.12-11-009
Exhibit PG&E-3 Workpapers

Table 2-13
Pacific Gas and Electric Company
2014 General Rate Case
Exhibit (PG&E-3), Chapter 2
System Operations Gas Control
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

				Capital Expenditures										
No.		MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference From
1		4A	Gas Control	-	-	-	-	-	4,447	24,851	62,209	63,008	64,918	WP 2-20, lines 1,10; WP 2-21, line 10, 18 WP 2-22, line 18,27; WP 2-23, lines 27,35 WP 2-24, line 35, 43; WP 2-56, line 90
2		**Total**		**-**	**-**	**-**	**-**	**-**	**4,447**	**24,851**	**62,209**	**63,008**	**64,918**	

Table 5-13
Pacific Gas and Electric
2014 GRC
Exhibit (PG&E-3),Chapter 5
Pipe, Meter and Other Preventative Maintenance
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	**MWC**	**Description**	**2007 Recorded**	**2008 Recorded**	**2009 Recorded**	**2010 Recorded**	**2011 Recorded**	**2012 Forecast**	**2013 Forecast**	**2014 Forecast**	**2015 Forecast**	**2016 Forcast**	**Reference**
1	27	Gas Meter Protection-Capital	15	73	17	15	9	1,027	1,000	246	252	258	From: WP 5-33, Lines 1, 4, 7, 10, 13, & 16 To: Testimony 5-28, Lines 8 (2011), 12 (2012) and 13 (2013-2016); WP 5-57, Line
2	**Total**		**15**	**73**	**17**	**15**	**9**	**1,027**	**1,000**	**246**	**252**	**258**	(2012-14), 5-3, Line 1 (2015-2016; 5-28, Table 5-7, Line 1; 5-31, Table 5-10, Line 1 (2011-16)

Table 5-16
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-3), Chapter 5
Pipe, Meter and Equipment Maintenance
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	27	Gas Meter Protection-Capital	15	73	17	15	9	1,027	1,000	246	252	258	To: WP 5-22, Line 2
2	**Grand Total**		**15**	**73**	**17**	**15**	**9**	**1,027**	**1,000**	**246**	**252**	**258**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Table 7-13
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-3), Chapter 7
Gas Field Services and Response
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

				Capital Expenditures											
No.		MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference From	Reference To
1		74	Regulator Replacement - Capitalized Labor	209	193	326	781	772	2,620	14,481	14,879	15,363	15,826	WP 7-23 to 7-24, lines 1, 5, 9, 13, 17, 21	7-2, lines 21, 22
2		**Total**		**209**	**193**	**326**	**781**	**772**	**2,620**	**14,481**	**14,879**	**15,363**	**15,826**		7-3, Table 7-1, line 2; 7-11, line 23; 7-21, Table 7-10, line 4

*Differences due to rounding.

Table 7-16
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-3), Chapter 7
Gas Field Services and Response
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
0													
1	74	Regulator Replacement - Capitalized Labor	209	193	326	781	772	2,620	14,481	14,879	15,363	15,826	
2	Grand Total		209	193	326	781	772	2,620	14,481	14,879	15,363	15,826	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual project s classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Workpaper Table 8-1
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-3), Chapter 8
Gas Distribution Capital and Investment Planning
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures											
No.	**MWC**	**Description**	**2007 Recorded**	**2008 Recorded**	**2009 Recorded**	**2010 Recorded**	**2011 Recorded**	**2012 Forecast**	**2013 Forecast**	**2014 Forecast**	**2015 Forecast**	**2016 Forecast**	**Reference From**	**Reference To**
1	05	Tools & Equipment	1,382	1,490	2,224	766	1,040	4,825	15,900	2,558	2,604	2,669	WP 8-5 line 2; WP 8-6 line 2; WP 8-7 & WP 8-8, lines 1,7,14,22,30,38	8-5, Table 8-3, line 3; 8-5, lines 11-12; 8-26, Table 8-10, line 1
2	14	G Dist Pipeline Repl Program	76,916	105,603	99,470	102,063	127,010	172,221	203,886	331,190	336,625	342,777	WP 8-5 line 6; WP 8-6 line 6; WP 8-9 to WP 8-12, lines 1,6,11,16,21,26	8-26, Table 8-10, line 2
3	2K	G Dist Repl/Convert Cust HPR	-	0	293	1,220	19,648	42,000	50,000	51,150	52,071	-	WP 8-5 line 8; WP 8-6 line 8; WP 8-23 & WP 8-24, lines 1,4,7,10,14,17	8-26, Table 8-10, line 7
4	31	NGV - Station Infrastructure	3,612	4,300	3,166	2,547	1,443	2,800	2,950	2,890	2,910	2,983	WP 8-5 line 10; WP 8-6 line 10; WP 8-13, lines 1,4,7,10,13,16	8-26, Table 8-10, line 3
5	47	G Dist Capacity	8,143	12,062	8,384	14,893	12,521	14,000	14,552	15,138	15,615	16,743	WP 8-5 line 14; WP 8-6 line 14; WP 8-14 to WP 8-15, lines 1,6,11,16,20,26	8-26, Table 8-10, line 4
6	50	G Dist Reliability General	10,961	14,954	29,495	33,394	58,512	62,707	72,439	128,055	129,914	130,298	WP 8-5 line 23; WP 8-6 line 23; WP 8-16 to WP 8-21, lines 1,10,19,29,38,47	8-26, Table 8-10, line 5
7	52	G Dist Leak Repl/Emergency	256	375	251	600	509	690	600	614	625	640	WP 8-5 line 25; WP 8-6 line 25; WP 8-22, lines 1,4,7,10,13,16	8-26, Table 8-10, line 6
8	**Total**		**101,271**	**138,785**	**143,282**	**155,484**	**220,682**	**299,244**	**360,327**	**531,594**	**540,363**	**496,111**	WP 8-5 line 26; WP 8-6 line 26	8-1, lines 23-27; 8-2, lines 3-4; 8-26, Table 8-10, line 8

Workpaper Table 8-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-3), Chapter 8
Gas Distribution Capital and Investment Planning
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
0													
1	05	Tools & Equipment	-	348	1,350	609	1,040	4,825	15,900	2,558	2,604	2,669	
2	14	G Dist Pipeline Repl Program	27,409	52,431	49,616	52,328	71,709	107,410	30,405	1,846	1,353	306	
3	2K	G Dist Repl/Convert Cust HPR	-	0	293	1,220	12,166	34,125	-	-	-	-	
4	31	NGV - Station Infrastructure	3,277	3,768	524	1,823	(18)	2,800	2,950	2,890	2,910	2,983	
5	47	G Dist Capacity	8,143	12,062	8,384	14,893	12,521	14,000	14,552	15,138	15,615	16,743	
6	50	G Dist Reliability General	10,019	14,319	28,528	31,298	51,721	48,511	48,339	54,468	55,540	56,728	
7	52	G Dist Leak Repl/Emergency	256	375	251	600	509	690	600	614	625	640	
8	**Grand Total**		**49,105**	**83,302**	**88,946**	**102,771**	**149,646**	**212,361**	**112,746**	**77,513**	**78,647**	**80,069**	To: WP 8-2, line 2

Table 9-13
Pacific Gas and Electric
2014 GRC
Exhibit (PG&E-3), Chapter 9
New Business and Work at the Request of Others
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.	MWC	Description	Capital Expenditures 2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
	29	G Dist Customer Connects	67,925	46,375	39,825	23,627	32,078	33,000	54,000	83,000	106,000	118,000	From: WP 9-20, lines 1, 7, 13, 18, 23, 28; To: 9-3, Table 9-2, line 1; 9-27, Table 9-24,
1													line 1; 9-18, Table 9-15, line 6
	51	G Dist WRO	15,870	26,294	25,716	37,063	50,847	46,465	39,000	45,000	49,000	49,000	From: WP 9-21, line 1, 7, 13 and WP 9-22, line 19, 25, 31 To: 9-3, Table 9-2, line 2; 9-26, Table 9-22,
2													line 6; 9-27, Table 9-24, line 2;
	Total		**83,795**	**72,669**	**65,541**	**60,690**	**82,924**	**79,465**	**93,000**	**128,000**	**155,000**	**167,000**	From: WP 9-14, line 3 To: 9-2, lines 10-12 & 15; 9-3, Table 9-2,
3													line 3; 9-27, Table 9-24, line 3
4										2014 Total =	128,000		
5										minus 2011 Total =	(82,924)		
											45,076		or 54.4% greater (a), where (a) = (128,000/82,924); To: 9-2, line 14
6													

Table 9-16
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-3), Chapter 9
New Business and Work at the Request of Others
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	29	G Dist Customer Connects	67,925	47,732	39,660	23,566	32,076	33,000	54,000	83,000	106,000	118,000	
2	51	G Dist WRO	15,870	26,231	25,252	34,127	40,639	36,465	37,000	40,000	43,000	43,000	
3	**Grand Total**		**83,795**	**73,963**	**64,912**	**57,693**	**72,716**	**69,465**	**91,000**	**123,000**	**149,000**	**161,000**	To: WP 9-14, line 2 (2012-2016)

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual project s classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Table 11-9
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-3), Chapter 11
Gas Operations Technology Costs
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.	MWC	Description	Capital Expenditures 2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded [A]	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	2F	Build IT Apps & Infra	-	-	712	2,921	2,977	26,919	27,725	43,722	34,235	14,649	
2	**Total**		**-**	**-**	**712**	**2,921**	**2,977**	**26,919**	**27,725**	**43,722**	**34,235**	**14,649**	To: 11-5, lines 13-14, 17 Fr: WP 11-19, line 30 (2011-2016)

[A]

Description	2011 Recorded	Reference
Pathfinder Project	$ 1,016	Fr: WP 11-19, line 1
Gas Ops - Laptops	135	Fr: WP 11-19, line 16
Base GIS - GD	1,627	Fr: WP 11-19, line 5a
Other	200	Fr: WP 11-19, line 27
Total	**$ 2,977**	

[B]

		Reference
2014 Forecast	43,722	
2011 Recorded [A]	-2,977	
	40,745	To: 11-5, line 16

Table 11-12
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-3), Chapter 11
Gas Operations Technology Costs
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	2F	Build IT Apps & Infra	-	-	-	-	135	14,449	800	-	-	-	From: WP 11-18, line
2	**Grand Total**		**-**	**-**	**-**	**-**	**135**	**14,449**	**800**	**-**	**-**	**-**	To WP 11-16, line 2

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

	Description	2011 Recorded	2012 Forecast	2013 Forecast	Reference
3					
4	Laptops	$135	$0	$0	Fr: WP 11-19, line 16
5	Pathfinder Project [A]	0	3,940	0	To: WP 11-17, line 19; Fr: WP 11-19, line 1 [A]
6	Technical Information Library	0	1,010	0	Fr: WP 11-19, line 4
7	Gas Control Center Radio	0	7,138	0	Fr: WP 11-19, line 12
8	Gas Control Information Tech	0	1,715	0	Fr: WP 11-19, line 13
9	Gas Operations IT Enhancement	0	246	0	Fr: WP 11-19, line 15
10	Mobile for Short Cycle Crews	0	400	0	Fr: WP 11-19, line 20
11	FAS Interfaces for Gas	0		800	Fr: WP 11-19, line 25
12	**Total**	**$ 135**	**$ 14,449**	**$ 800**	**To WP 11-18, line 1**

[A] Pathfinder Project 2012 Total $14,440 WP 11-19, line 1. Part of the Pathfinder project $10,500 is reflected on WP 11-17, line 1 and the remainder $3,940 is reflected on WP-11-18, line 5

Table 12-1
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-3), Chapter 12
Gas Operations Building Projects, AGA Fees and PAS 55 Certif
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.	MWC	Description	Capital Expenditures										Reference
			2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	
1	78	Manage Buildings	29	2,978	446	29	496	37,555	34,210	61,494	47,553	23,301	From WP 12-11, Lines 1, 6, 11, 16, 21; WP 12-12, Line 26; To 12-2, Lines 3, 4, 7; 12-2, Table 12-2, Line 1; 12-14, Lines 6-8, 12-14, Table 12-7, Line 3; 12-15, Table 12-9, Line 1
2	**Total**		**29**	**2,978**	**446**	**29**	**496**	**37,555**	**34,210**	**61,494**	**47,553**	**23,301**	
3													To 12-14, Table 12-7, line 1

Table 12-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-3), Chapter 12
Gas Operations Building Projects, AGA Fees and PAS 55 Certif
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	78	Manage Buildings	-	-	371	32	496	3,000	3,486	2,000	2,400	2,000	From: WP 12-11, Lines 4, 9, 14, 19; WP 12-12, Line 24 To: WP 12-6, Line 2
2	**Grand Total**		-	-	**371**	**32**	**496**	**3,000**	**3,486**	**2,000**	**2,400**	**2,000**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

2014 GRC
A.12-11-009
Exhibit PG&E- 4 Workpapers

Workpaper Table 2-6
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 2
Electric Operations Technology
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			2007.INP	2008.INP	2009.INP	2010.INP	2011.INP	2012.INP	2013.INP	2014.INP	2015.INP	2016.INP	
							Capital Expenditures						
No.		MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1		2F	Build IT Apps & Infra	-	-	13,598	21,171	30,074	36,828	53,499	71,259	72,068	68,662	WP 2-19, Line 103
2		0	#NODATA	-	-	-	-	-	-	-	-	-	-	
2		**Total**		**-**	**-**	**13,598**	**21,171**	**30,074**	**36,828**	**53,499**	**71,259**	**72,068**	**68,662**	

Workpaper Table 2-9
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 2
Electric Operations Technology
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			2007.INP	2008.INP	2009.INP	2010.INP	2011.INP	2012.INP	2013.INP	2014.INP	2015.INP	2016.INP	
			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	2F	Build IT A	-	-	-	-	1,316	1,571	270	-	-	-	P 2-7, Line 2
2	0	#NODATA	-	-	-	-	-	-	-	-	-	-	
2	**Grand Total**		**-**	**-**	**-**	**-**	**1,316**	**1,571**	**270**	**-**	**-**	**-**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects

Workpaper Table 3-10
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 3
Applied Technology Services
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures									
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	05	Tools & Equipment	200	438	457	741	985	540	645	645	645	645	WP 3-19, Line 4
2	78	Manage Buildings	66	9	1,101	1,422	2,888	1,950	300	2,188	1,214	230	WP 3-19, Line 11
3	**Total**		**266**	**448**	**1,558**	**2,164**	**3,873**	**2,490**	**945**	**2,833**	**1,859**	**875**	WP 3-19, Line 13

Workpaper Table 3-13
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 3
Applied Technology Services
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	05	Tools & Equipment	200	438	457	741	985	540	645	645	645	645	WP 3-19, Line 4
2	78	Manage Buildings	-	-	73	0	275	450	300	1,204	230	230	WP 3-19, Line 7
3	**Grand Total**		**200**	**438**	**530**	**741**	**1,260**	**990**	**945**	**1,849**	**875**	**875**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual project s classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Workpaper Table 5-16
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 5
Electric Distribution Maintenance
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures									
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	2A	E Dist Inst/Repl OH General	54,880	57,752	59,518	69,125	93,980	93,449	108,678	108,486	93,946	89,120	WP 5-24 Line 2, WP 5-25
2	2B	E Dist Inst/Repl UG	17,260	15,807	17,841	17,190	31,440	28,588	34,501	48,416	48,343	48,526	WP 5-24 Line 3, WP 5-27
3	2C	E Dist Inst/Repl Network	658	4,477	4,128	8,037	18,460	19,577	17,859	19,613	17,525	16,586	WP 5-24 Line 4, WP 5-28
4	**Total**		**72,797**	**78,036**	**81,487**	**94,352**	**143,880**	**141,614**	**161,038**	**176,515**	**159,814**	**154,232**	

Workpaper Table 5-19
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 5
Electric Distribution Maintenance
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	2A	E Dist Inst/Repl OH General	54,822	55,320	57,524	68,859	91,449	93,449	108,678	108,486	93,946	89,120	WP 5-24 Line 2, WP 5-25
2	2B	E Dist Inst/Repl UG	17,260	15,807	17,841	17,190	31,440	28,588	34,501	48,416	48,343	48,526	WP 5-24 Line 3, WP 5-27
3	2C	E Dist Inst/Repl Network	658	4,477	4,128	8,037	18,460	19,577	17,859	19,613	17,525	16,586	WP 5-24 Line 4, WP 5-28
4	**Grand Total**		**72,739**	**75,604**	**79,493**	**94,086**	**141,348**	**141,614**	**161,038**	**176,515**	**159,814**	**154,232**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual project s classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Workpaper Table 7-1
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 7
Pole Replacement
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures									
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	07	E Dist Inst/Repl OH Poles	28,775	33,272	34,319	44,540	89,113	155,704	159,798	69,578	67,912	61,103	WP 7-5 WP 7-7 WP 7-8
2	**Total**		**28,775**	**33,272**	**34,319**	**44,540**	**89,113**	**155,704**	**159,798**	**69,578**	**67,912**	**61,103**	

Workpaper Table 7-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 7
Pole Replacement
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	07	E Dist Inst/Repl OH Poles	28,775	33,272	34,319	44,540	89,113	155,704	159,798	69,578	67,912	61,103	WP 7-5 WP 7-7 WP 7-8
2	**Grand Total**		**28,775**	**33,272**	**34,319**	**44,540**	**89,113**	**155,704**	**159,798**	**69,578**	**67,912**	**61,103**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual project s classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Workpaper Table 9-16
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 9
New Business And Work At The Request Of Others
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	10	E Dist WRO General	50,353	50,910	65,853	64,974	84,500	69,700	83,290	96,465	101,495	99,692	WP 9-43, Line12
2	16	E Dist Customer Connects	298,343	278,908	263,648	180,960	211,699	210,000	272,545	339,566	400,612	437,853	WP 9-20, Line 10
3	96	Separately Funded Capital	7,460	9,020	5,646	(230)	28	-	-	-	-	-	
4	**Total**		**356,157**	**338,838**	**335,146**	**245,703**	**296,227**	**279,700**	**355,835**	**436,031**	**502,107**	**537,545**	

Workpaper Table 9-19
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 9
New Business And Work At The Request Of Others
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	10	E Dist WRO General	50,353	51,260	65,254	62,773	75,115	59,949	75,290	83,465	90,495	94,692	
2	16	E Dist Customer Connects	298,343	281,430	264,514	179,822	211,384	210,000	272,545	339,566	400,612	437,853	
3	96	Separately Funded Capital	6,260	6,965	3,992	(230)	28	-	-	-	-	-	
4	**Grand Total**		**354,956**	**339,655**	**333,760**	**242,365**	**286,527**	**269,949**	**347,835**	**423,031**	**491,107**	**532,545**	WP 9-17, line 2

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Workpaper Table 10-11
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 10
Electric Emergency Recovery
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	17	E Dist Routine Emergency	80,700	97,711	110,961	111,601	115,645	119,410	119,791	119,522	119,387	119,724	WP 10-19, Line 9
2	95	E Dist Major Emergency	26,186	46,158	41,272	64,085	86,912	55,290	54,449	54,260	54,165	54,402	WP 10-20, Line 7
3	**Total**		**106,886**	**143,870**	**152,233**	**175,686**	**202,557**	**174,700**	**174,241**	**173,782**	**173,552**	**174,126**	

Workpaper Table 10-14
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 10
Electric Emergency Recovery
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	17	E Dist Routine Emergency	80,700	98,639	111,566	110,264	116,628	119,410	119,791	119,522	119,387	119,724	
2	95	E Dist Major Emergency	24,482	46,158	41,271	64,083	86,863	55,290	54,449	54,260	54,165	54,402	
3	**Grand Total**		**105,181**	**144,797**	**152,837**	**174,348**	**203,491**	**174,700**	**174,241**	**173,782**	**173,552**	**174,126**	WP 10-16, Line 2

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual project s classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Workpaper Table 11-14
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 11
Electric Distribution Operations
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures									
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	2F	Build IT Apps & Infra	-	-	-	1	0	2,413	6,373	904	-	-	WP 11-21, Line 4
2	63	E T&D Control System/ Facility	-	-	-	4,832	1,863	5,000	34,971	33,849	-	-	WP 11-21, Line 9
3	**Total**		**-**	**-**	**-**	**4,833**	**1,863**	**7,413**	**41,345**	**34,753**	**-**	**-**	WP 11-21, Line 11

Workpaper Table 11-17
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 11
Electric Distribution Operations
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	2F	Build IT Apps & Infra	-	-	-	1	0	-	-	-	-	-	
2	63	E T&D Control System/ Facility	-	-	-	-	23	-	971	849	-	-	
3	**Grand Total**		**-**	**-**	**-**	**1**	**23**	**-**	**971**	**849**	**-**	**-**	WP 11-18, Line 2

***** Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Workpaper Table 12-1
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 12
Electric Distribution Capacity
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	06	E Dist Line Capacity	75,102	88,685	83,230	81,363	90,258	83,057	85,148	107,913	98,705	107,631	WP 12-10, line 14
2	46	E Dist Subst Capacity	73,271	106,567	95,239	63,092	63,009	58,330	52,616	74,892	97,142	89,011	WP 12-10, line 25
3		**Total**	**148,373**	**195,252**	**178,469**	**144,455**	**153,267**	**141,387**	**137,764**	**182,805**	**195,846**	**196,642**	WP 12-10, line 33
	Cornerstone												
4	06	E Dist Line Capacity	-	-	-	15	11,095	15,080	2,000	-	-	-	WP 12-10, line 15
5	46	E Dist Subst Capacity	-	-	-	270	34,077	33,598	4,000	-	-	-	WP 12-10, line 26
6		**Total**	**-**	**-**	**-**	**285**	**45,172**	**48,678**	**6,000**	**-**	**-**	**-**	WP 12-10, line 35
7	**Grand Total**		**148,373**	**195,252**	**178,469**	**144,739**	**198,439**	**190,065**	**143,764**	**182,805**	**195,846**	**196,642**	WP 12-10, line 38

Workpaper Table 12-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 12
Electric Distribution Capacity
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	06	E Dist Line Capacity	47,651	47,394	52,098	43,604	47,173	48,570	58,946	73,711	76,214	85,281	
Cornerstone													
2	06	E Dist Line Capacity	-	-	-	3	1,850	10,080	2,000	-	-	-	
3		**06 Total**	**47,651**	**47,394**	**52,098**	**43,607**	**49,023**	**58,650**	**60,946**	**73,711**	**76,214**	**85,281**	
4	46	E Dist Subst Capacity	8,654	4,327	3,004	1,935	3,615	4,731	3,596	7,092	6,074	4,711	
Cornerstone													
5	46	E Dist Subst Capacity	-	-	-	11	113	443	4,000	-	-	-	
6		**46 Total**	**8,654**	**4,327**	**3,004**	**1,946**	**3,728**	**5,174**	**7,596**	**7,092**	**6,074**	**4,711**	
7	**Grand Total**		**56,304**	**51,721**	**55,102**	**45,553**	**52,751**	**63,824**	**68,542**	**80,803**	**82,287**	**89,992**	WP 12-2, Line 6

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual project s classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Workpaper Table 13-8
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 13
Substation Asset Strategy
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures									
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Workpaper Reference
1	48	E Dist Subst Repl Other Equip	16,994	28,579	29,767	26,304	49,179	50,401	54,906	66,021	74,622	97,478	WP 13-14, Line 14
2	54	E Dist Subst Repl Transformer	33,039	46,724	52,335	38,336	46,138	62,329	41,151	64,854	60,191	55,714	WP 13-14, Line 24
3	58	E Dist Repl Substation Safety	3,341	1,997	788	499	1,152	875	3,138	3,126	3,120	3,110	WP 13-14, Line 34
4	59	E Dist Subst Emergency Repl	32,945	33,067	34,677	40,986	40,942	27,342	41,153	41,011	40,940	41,118	WP 13-14, Line 41
5	**Total**		**86,319**	**110,367**	**117,567**	**106,125**	**137,411**	**140,947**	**140,349**	**175,012**	**178,873**	**197,420**	

Workpaper Table 13-11
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 13
Substation Asset Strategy
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Workpaper Reference
1	48	E Dist Subst Repl Other Equip	12,885	4,621	4,530	8,491	20,534	14,012	20,418	21,809	23,122	25,528	
2	54	E Dist Subst Repl Transformer	2,374	962	782	1,140	2,472	6,293	2,351	4,804	2,991	8,914	
3	58	E Dist Repl Substation Safety	829	1,923	744	335	48	875	3,138	3,126	3,120	3,110	
4	59	E Dist Subst Emergency Repl	27,761	28,438	26,497	12,742	16,958	9,381	32,553	41,011	40,940	41,118	
5	**Grand Total**		**43,849**	**35,944**	**32,553**	**22,708**	**40,013**	**30,562**	**58,461**	**70,750**	**70,173**	**78,670**	WP 13-9, Line 2

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Workpaper Table 15-1
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 15
Electric Distribution Reliability
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

				Capital Expenditures									
No.	MWC	Description		2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	08	E Dist Reliability Base		11,054	9,845	9,295	17,235	20,666	21,565	25,205	68,186	69,740	71,656	WP 15-5, Line 6 and 15
	Cornerstone													
2	08	E Dist Reliability Base		-	-	16	4,256	65,668	81,322	106,050	-	-	-	WP 15-5, Line 11
3			**Total**	11,054	9,845	9,311	21,491	86,334	102,887	131,255	68,186	69,740	71,656	WP 15-5, Line 16
4	49	E Dist Reliability Ckt/Zone		21,896	29,910	31,732	81,776	71,067	59,907	61,719	103,840	104,720	107,551	WP 15-5, Line 28
5	**Total**			**32,950**	**39,755**	**41,043**	**103,267**	**157,401**	**162,794**	**192,974**	**172,026**	**174,460**	**179,207**	

Workpaper Table 15-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 15
Electric Distribution Reliability
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	08	E Dist Reliability Base	9,831	9,825	9,294	17,205	18,067	21,565	25,205	68,186	69,740	71,656	
	Cornerstone												
2	08	E Dist Reliability Base	-	-	16	4,248	63,568	76,322	106,050	-	-	-	
3		**Total**	9,831	9,825	9,311	21,453	81,635	97,887	131,255	68,186	69,740	71,656	
4	49	E Dist Reliability Ckt/Zone	21,896	29,910	31,730	78,903	61,746	59,907	61,719	103,840	104,720	107,551	
5		**Grand Total**	**31,727**	**39,735**	**41,041**	**100,355**	**143,381**	**157,794**	**192,974**	**172,026**	**174,460**	**179,207**	WP 15-2, Line 2

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Workpaper Table 16-1
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 16
Underground Asset Management
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures									
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	56	E Dist Replace UG Asset-Gen	30,055	22,084	17,437	37,430	55,821	74,200	68,918	140,078	157,715	158,293	WP 16-6, Line 8
2	**Total**		**30,055**	**22,084**	**17,437**	**37,430**	**55,821**	**74,200**	**68,918**	**140,078**	**157,715**	**158,293**	

ERRATA Adjustment	-12,500	-12,500
Adjusted 2015-2016 Forecast	145,215	145,793

Workpaper Table 16-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 16
Underground Asset Management
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	56	E Dist Replace UG Asset-Gen	8,963	4,501	5,762	17,808	31,093	66,650	42,798	94,888	117,205	133,483	WP 16-2, Line 2
2	**Grand Total**		**8,963**	**4,501**	**5,762**	**17,808**	**31,093**	**66,650**	**42,798**	**94,888**	**117,205**	**133,483**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual project s classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Note that the forecast for 2012 includes some projects that are > $1 Million. Please refer to Workpaper Table 16-6 for a comple te listing (including references to Project Summary sheets).

Workpaper Table 17-8
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 17
Distribution Automation And System Protection
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures									
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	09	E Dist Automation & Protection	8,737	8,605	8,188	7,882	22,057	37,185	47,273	73,454	74,685	73,913	WP 17-13, Line 10
2	**Total**		**8,737**	**8,605**	**8,188**	**7,882**	**22,057**	**37,185**	**47,273**	**73,454**	**74,685**	**73,913**	

Workpaper Table 17-11
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 17
Distribution Automation And System Protection
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	09	E Dist Automation & Protection	946	111	208	208	4,934	6,587	1,622	2,154	2,085	2,313	WP 17-10, Line 2
2	**Grand Total**		**946**	**111**	**208**	**208**	**4,934**	**6,587**	**1,622**	**2,154**	**2,085**	**2,313**	

***** Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Workpaper Table 18-1
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 18
Rule 20A
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures									
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	30	E Dist WRO Rule 20A	45,385	39,916	41,142	36,610	33,628	61,799	88,451	88,222	88,107	88,394	WP 18-5, Line 26
2	**Total**		**45,385**	**39,916**	**41,142**	**36,610**	**33,628**	**61,799**	**88,451**	**88,222**	**88,107**	**88,394**	

Workpaper Table 18-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 18
Rule 20A
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	30	E Dist WRO Rule 20A	-	(43)	(91)	(1,461)	(1,442)	(0)	2,451	2,222	72,769	88,394	WP 18-2, Line 2
2	**Grand Total**		**-**	**(43)**	**(91)**	**(1,461)**	**(1,442)**	**(0)**	**2,451**	**2,222**	**72,769**	**88,394**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual project s classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Workpaper Table 19-1
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 19
LED Streetlight Program
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	2A	E Dist Inst/Repl OH General	-	-	-	-	-	-	-	18,600	22,320	18,600	WP 19-5, Line 22
2	**Total**		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**18,600**	**22,320**	**18,600**	

Workpaper Table 19-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 19
LED Streetlight Program
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	2A	E Dist Inst/Repl OH General	-	-	-	-	-	-	-	-	-	-	
2	**Grand Total**		-	-	-	-	-	-	-	-	-	-	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Workpaper Table 20-9
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 20
Electric Distribution Support Activities
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

2007.INP	2008.INP	2009.INP	2010.INP	2011.INP	2012.INP	2013.INP	2014.INP	2015.INP	2016.INP

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	05	Tools & Equipment	(1,155)	(3,022)	(4,729)	(3,299)	(2,947)	(914)	(43,508)	(46,628)	(45,565)	(2,979)	WP 20-13, Line 7
2	78	Manage Buildings	856	242	266	(229)	614	870	6,477	1,735	2,753	2,745	WP 20-13, Line 10
3	**Total**		**(299)**	**(2,780)**	**(4,463)**	**(3,528)**	**(2,333)**	**(44)**	**(37,031)**	**(44,893)**	**(42,811)**	**(234)**	WP 20-13, Line 12

Workpaper Table 20-12
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-4), Chapter 20
Electric Distribution Support Activities
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			2007.INP	2008.INP	2009.INP	2010.INP	2011.INP	2012.INP	2013.INP	2014.INP	2015.INP	2016.INP	
			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	05	Tools & E	(1,155)	(3,022)	(4,729)	(3,299)	(2,947)	(914)	(43,508)	(46,628)	(45,565)	(2,979)	
2	78	Manage E	1,336	145	153	(212)	614	870	6,477	1,735	2,753	2,745	
3	**Grand Total**		**181**	**(2,877)**	**(4,577)**	**(3,511)**	**(2,333)**	**(44)**	**(37,031)**	**(44,893)**	**(42,811)**	**(234)**	P 20-10, Line 2

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects

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Exhibit PG&E-5 Workpapers

Table 2-1
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-5), Chapter 2
Customer Inquiry Assistance
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	23	Implement RealEstate Strategy	119	-	-	-	-	-	-	15,500	-	-	
2	2F	Build IT Apps & Infra	2	37	-	-	-	-	-	-	-	-	
3	**Total**		**121**	**37**	**-**	**-**	**-**	**-**	**-**	**15,500**	**-**	**-**	

Table 2-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-5), Chapter 2
Customer Inquiry Assistance
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	23	Implement RealEstate Strategy	119	-	-	-	-	-	-	-	-	-	
2	2F	Build IT Apps & Infra	2	37	-	-	-	-	-	-	-	-	
3	**Grand Total**		**121**	**37**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC , and may differ from recorded amounts presented in other tables in this chapter.

Table 3-5
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-5), Chapter 3
Office Services
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	21	Misc Capital	-	-	-	-	-	223	-	100	100	100	
2	22	Maintain Buildings	-	-	-	-	-	-	-	3,880	4,058	3,672	
3	23	Implement RealEstate Strategy	127	5	4	101	112	-	-	-	-	-	
4	**Total**		**127**	**5**	**4**	**101**	**112**	**223**	**-**	**3,980**	**4,158**	**3,772**	

Table 3-8
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-5), Chapter 3
Office Services
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	21	Misc Capital	-	-	-	-	-	223	-	100	100	100	
2	22	Maintain Buildings	-	-	-	-	-	-	-	-	-	-	
3	23	Implement RealEstate Strategy	127	5	4	101	112	-	-	-	-	-	
4	**Grand Total**		**127**	**5**	**4**	**101**	**112**	**223**	**-**	**100**	**100**	**100**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Table 4-1
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-5), Chapter 4
Meter to Cash
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	21	Misc Capital	4,172	460	218	28	4,401	603	-	-	-	-	
2	23	Implement RealEstate Strategy	-	-	-	-	-	-	-	9,011	-	-	
3	**Total**		**4,172**	**460**	**218**	**28**	**4,401**	**603**	**-**	**9,011**	**-**	**-**	

Table 4-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-5), Chapter 4
Meter to Cash
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	21	Misc Capital	-	460	218	28	4,401	603	-	-	-	-	
2	23	Implement RealEstate Strategy	-	-	-	-	-	-	-	-	-	-	
3	**Grand Total**		**-**	**460**	**218**	**28**	**4,401**	**603**	**-**	**-**	**-**	**-**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC , and may differ from recorded amounts presented in other tables in this chapter.

Table 5-1
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-5), Chapter 5
Metering
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	01	IT - Desktop Computers	-	-	-	136	400	1,056	1,000	-	-	-	
2	05	Tools & Equipment	178	177	173	261	1,707	1,200	1,212	1,220	1,228	1,236	
3	25	Install New Electric Meters	33,037	34,256	23,291	23,708	32,120	38,649	44,392	42,598	43,196	44,383	
4	74	Install New Gas Meters	29,235	32,967	46,685	63,198	67,117	76,048	81,350	84,391	86,492	88,792	
5	**Total**		**62,450**	**67,400**	**70,149**	**87,303**	**101,344**	**116,953**	**127,954**	**128,209**	**130,916**	**134,412**	

Table 5-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-5), Chapter 5
Metering
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	01	IT - Desktop Computers	-	-	-	136	400	1,056	1,000	-	-	-	
2	05	Tools & Equipment	178	177	173	261	1,707	1,200	1,212	1,220	1,228	1,236	
3	25	Install New Electric Meters	33,037	34,256	23,291	23,708	32,120	38,649	44,392	42,598	43,196	44,383	
4	74	Install New Gas Meters	29,235	32,967	46,685	63,198	67,117	76,048	81,350	84,391	86,492	88,792	
5	**Grand Total**		**62,450**	**67,400**	**70,149**	**87,303**	**101,344**	**116,953**	**127,954**	**128,209**	**130,916**	**134,412**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual project s classified as greater than $1M in the 2011 GI
, and may differ from recorded amounts presented in other tables in this chapter.

Table 7-1
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-5), Chapter 7
Customer Energy Solutions
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures									
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	28	EV - Station Infrastructure	-	-	-	-	216	326	840	-	-	-	
2		**Total**	**-**	**-**	**-**	**-**	**216**	**326**	**840**	**-**	**-**	**-**	

Table 7-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-5), Chapter 7
Customer Energy Solutions
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	28	EV - Station Infrastructure	-	-	-	-	216	-	-	-	-	-	
2	**Grand Total**		**-**	**-**	**-**	**-**	**216**	**-**	**-**	**-**	**-**	**-**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Table 9-1
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-5), Chapter 9
IT Programs
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	2F	Build IT Apps & Infra	3	16,102	25,856	26,648	7,785	15,978	13,800	33,400	31,700	23,500	
2		**Total**	**3**	**16,102**	**25,856**	**26,648**	**7,785**	**15,978**	**13,800**	**33,400**	**31,700**	**23,500**	

Table 9-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-5), Chapter 9
IT Programs
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	2F	Build IT Apps & Infra	3	0	923	769	181	400	-	900	-	-	
2	**Grand Total**		**3**	**0**	**923**	**769**	**181**	**400**	**-**	**900**	**-**	**-**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 20
, and may differ from recorded amounts presented in other tables in this chapter.

Table 10-1
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-5), Chapter 10
SmartMeter Program
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	97	Manage SmartMeter	213,440	252,621	517,013	508,778	158,390	57,388	33,500	-	-	-	
2	**Total**		**213,440**	**252,621**	**517,013**	**508,778**	**158,390**	**57,388**	**33,500**	**-**	**-**	**-**	

Table 10-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-5), Chapter 10
SmartMeter Program
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	97	Manage SmartMeter	221	3,800	5,252	4,026	3,637	1,372	337	-	-	-	
2	**Grand Total**		**221**	**3,800**	**5,252**	**4,026**	**3,637**	**1,372**	**337**	**-**	**-**	**-**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 20
, and may differ from recorded amounts presented in other tables in this chapter.

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Exhibit PG&E-6 Workpapers

Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-6), Chapter 2
Hydro Operations
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

	2007.INP	2008.INP	2009.INP	2010.INP	2011.INP	2012.INP	2013.INP	2014.INP	2015.INP	2016.INP

				Capital Expenditures								
No.		MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast
1		01	IT - Desktop Computers	-	-	2	36	-	-	-	-	-	-
2		03	Office Furniture & Equipment	-	193	131	-	-	-	-	-	-	-
3		05	Tools & Equipment	530	725	984	568	898	231	880	2,906	794	833
4		11	Relcn Hydro Implt Cap Lic Cond	23,469	30,545	50,299	61,698	30,707	26,408	39,566	45,176	45,391	51,161
5		12	Implement Environment Projects	2,335	3,229	5,417	7,134	8,045	7,535	5,958	8,320	7,309	5,889
6		2F	Build IT Apps & Infra	187	-	-	128	1,648	3,235	3,735	14,050	9,250	6,750
7		2L	Instl/Rpl for Hydro Safety&Reg	6,945	18,857	20,258	34,902	86,207	108,246	59,953	49,614	42,284	36,859
8		2M	Instal/Repl Hydro Gneratng Eqp	33,701	34,798	34,862	45,840	68,520	82,391	109,278	121,702	141,854	128,714
9		2N	Instal/Repl Resv,Dams&Waterway	8,767	18,422	23,137	22,150	43,645	30,668	36,116	86,244	144,554	164,250
10		2P	Instl/Rplc Hyd Sctr, Rds&Infst	591	4,424	2,169	2,612	4,531	3,761	5,477	16,652	17,420	13,350
11		2Q	Construct New Hydro Gen	-	-	8	(8)	-	-	-	-	-	-
12		**Total**		**76,525**	**111,193**	**137,266**	**175,059**	**244,201**	**262,475**	**260,963**	**344,664**	**408,857**	**407,806**

Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-6), Chapter 2
Hydro Operations
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			2007.INP	2008.INP	2009.INP	2010.INP	2011.INP	2012.INP	2013.INP	2014.INP	2015.INP	2016.INP
			Capital Expenditures									
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast
1	01	IT - Desktop Computers	-	-	2	36	-	-	-	-	-	-
2	03	Office Furniture & Equipment	-	193	131	-	-	-	-	-	-	-
3	05	Tools & Equipment	530	725	984	568	898	231	720	1,156	794	833
4	11	Relcn Hydro Implt Cap Lic Cond	1,583	1,229	1,649	2,185	2,305	1,932	1,196	1,503	1,006	1,986
5	12	Implement Environment Projects	1,480	1,439	2,699	1,192	4,274	4,726	3,159	6,080	2,959	3,489
6	2F	Build IT Apps & Infra	187	-	-	128	1,648	735	-	1,500	600	-
7	2L	Instl/Rpl for Hydro Safety&Reg	4,206	8,272	5,305	6,295	5,992	9,435	8,864	3,921	2,004	660
8	2M	Instal/Repl Hydro Gneratng Eqp	8,801	8,032	10,033	11,685	8,503	10,902	14,288	14,786	14,472	10,286
9	2N	Instal/Repl Resv,Dams&Waterway	3,602	2,201	3,424	2,638	6,118	5,472	6,959	6,009	7,982	900
10	2P	Instl/Rplc Hyd Sctr, Rds&Infst	355	2,348	1,709	849	3,249	2,954	3,651	5,570	5,920	650
11	2Q	Construct New Hydro Gen	-	-	-	-	-	-	-	-	-	-
12	**Grand Total**		**20,745**	**24,439**	**25,936**	**25,576**	**32,988**	**36,388**	**38,838**	**40,524**	**35,738**	**18,804**

* Excludes projects greater than $1M

Table 3-1
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-6), Chapter 3
Nuclear Operations
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			2007.INP	2008.INP	2009.INP	2010.INP	2011.INP	2012.INP	2013.INP	2014.INP	2015.INP	2016.INP	
			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	03	Office Furniture & Equipment	131	209	40	206	179	205	211	222	222	222	
2	04	Fleet / Auto Equip	1,944	1,333	425	204	634	1,018	1,220	1,220	1,220	1,220	
3	05	Tools & Equipment	1,154	2,057	1,305	1,030	1,856	1,720	1,065	1,065	1,665	1,665	
4	20	DCPP Capital	215,881	363,476	305,279	173,535	230,821	263,658	209,659	240,848	228,347	214,647	
5	2F	Build IT Apps & Infra	14,736	29,030	7,000	4,506	5,877	2,950	4,090	11,200	11,300	6,350	
6	**Total**		**233,846**	**396,105**	**314,048**	**179,481**	**239,367**	**269,550**	**216,245**	**254,555**	**242,754**	**224,104**	

WP 3-78 Ln 3

Table 3-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-6), Chapter 3
Nuclear Operations
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			2007.INP	2008.INP	2009.INP	2010.INP	2011.INP	2012.INP	2013.INP	2014.INP	2015.INP	2016.INP	
			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	03	Office Furniture & Equipment	131	209	40	206	179	205	211	222	222	222	
2	04	Fleet / Auto Equip	1,944	1,333	425	204	634	-	-	-	-	-	
3	05	Tools & Equipment	1,154	2,057	-	-	-	-	-	-	-	-	
4	20	DCPP Capital	10,983	7,858	8,862	9,623	8,197	16,715	10,537	11,139	6,585	8,961	
5	2F	Build IT Apps & Infra	20	110	2	433	382	500	-	-	500	100	
6	**Grand Total**		**14,232**	**11,567**	**9,328**	**10,465**	**9,393**	**17,420**	**10,748**	**11,361**	**7,307**	**9,283**	

* Excludes projects greater than $1M

Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-6), Chapter 4
Fossil and Other Generation Operations
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference From
1	03	Office Furniture & Equipment	19	-	-	-	48	-	20	-	-	-	WP 4-52, Line 1
2	05	Tools & Equipment	-	-	71	304	454	-	625	791	351	358	WP 4-52, Line 2
3	12	Implement Environment Projects	-		-	191	(2)	-	-	-	-	-	WP 4-52, Line 3
4	2F	Build IT Apps & Infra	-	-	-	-	67	195	-	-	-	-	WP 4-52, Line 4
5	2R	Instl/Rpl for Fosil Safety&Reg	-	-	98	327	431	442	3,379	-	-	-	WP 4-52, Line 5 + WP 4-53, Line 2
6	2S	Instal/Repl Fosil Gneratng Eqp	588	867	914	514	3,179	7,364	6,280	1,448	4,043	10,250	WP 4-52, Line 6 + WP 4-53, Line 13
7	2T	Instl/Repl Fosl BldgGrndInfrst	-	-	-	-	371	150	1,250	1,075	-	-	WP 4-52, Line 7 + WP 4-53, Line 15
8	2U	Construct New Fossil Gen	135,764	479,847	391,617	283,871	11,420	3,198	-	-	-	-	WP 4-52, Line 8 + WP 4-53, Line 17
9	3A	Instl/Rpl for AltGen Safty&Reg	-	-	-	-	-	-	40	41	43	43	WP 4-52, Line 9
10	3B	Instal/Repl AltGen GneratngEqp	-	-	-	-	282	-	-	-	-	-	WP 4-52, Line 10
11	3D	Construct New Alternative Gen	-	-	10,266	7,643	13,387	-	-	-	-	-	WP 4-52, Line 11
12	**Total**		**136,371**	**480,714**	**402,966**	**292,851**	**29,637**	**11,348**	**11,593**	**3,355**	**4,437**	**10,652**	Sum (Lines 1-11)

Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-6), Chapter 4
Fossil and Other Generation Operations
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures									
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast
1	03	Office Furniture & Equipment	19	-	-	-	48	-	20	-	-	-
2	05	Tools & Equipment	-	-	71	304	454	-	625	791	351	358
3	12	Implement Environment Projects	-	-	-	191	(2)	-	-	-	-	-
4	2F	Build IT Apps & Infra	-	-	-	-	67	195	-	-	-	-
5	2R	Instl/Rpl for Fosil Safety&Reg	-	-	98	327	431	442	879	-	-	-
6	2S	Instal/Repl Fosil Gneratng Eqp	588	867	908	70	767	1,125	1,650	450	270	750
7	2T	Instl/Repl Fosl BldgGrndInfrst	-	-	-	-	358	-	150	75	-	-
8	2U	Construct New Fossil Gen	-	(52)	86	(110)	25	269	-	-	-	-
9	3A	Instl/Rpl for AltGen Safty&Reg	-	-	-	-	-	-	40	41	43	43
10	3B	Instal/Repl AltGen GneratngEqp	-	-	-	-	282	-	-	-	-	-
11	3D	Construct New Alternative Gen	-	-	-	-	-	-	-	-	-	-
12	**Grand Total**		**606**	**816**	**1,163**	**783**	**2,429**	**2,030**	**3,364**	**1,357**	**664**	**1,152**

* Excludes projects greater than $1M

Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-6), Chapter 5
Energy Procurement Administration
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

2007.INP	2008.INP	2009.INP	2010.INP	2011.INP	2012.INP	2013.INP	2014.INP	2015.INP	2016.INP

			Capital Expenditures									
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	23	Implement RealEstate Strategy	-	-	-	-	-	4,000	2,200	-	-	-	WP 5-28, line 1
2	2F	Build IT Apps & Infra	12,434	29,090	13,018	22,554	25,809	34,360	25,540	33,900	32,650	30,500	WP 5-28, line 2
3	**Total**		**12,434**	**29,090**	**13,018**	**22,554**	**25,809**	**38,360**	**27,740**	**33,900**	**32,650**	**30,500**	WP 5-28, line 3

Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-6), Chapter 5
Energy Procurement Administration
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			2007.INP	2008.INP	2009.INP	2010.INP	2011.INP	2012.INP	2013.INP	2014.INP	2015.INP	2016.INP	
			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	23	Implement RealEstate Strategy	-	-	-	-	-	-	-	-	-	-	
2	2F	Build IT Apps & Infra	-	-	-	151	164	700	-	900	950	-	
3	**Grand Total**		**-**	**-**	**-**	**151**	**164**	**700**	**-**	**900**	**950**	**-**	WP 5-28, line 2

* Excludes projects greater than $1M

2014 GRC
A.12-11-009
Exhibit PG&E-7 Workpapers

Table 2-1
Pacific Gas and Electric
2014 GRC
Exhibit (PG&E-7), Chapter 2
Safety Engineering
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			2007.INP	2008.INP	2009.INP	2010.INP	2011.INP	2012.INP	2013.INP	2014.INP	2015.INP	2016.INP	
			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	2F	Build IT Apps & Infra	-	-	-	-	-	-	-	145	190	40	
2	0	#NODATA	-	-	-	-	-	-	-	-	-	-	
2	**Total**		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**145**	**190**	**40**	

Table 2-4
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-7), Chapter 2
Safety Engineering
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			2007.INP	2008.INP	2009.INP	2010.INP	2011.INP	2012.INP	2013.INP	2014.INP	2015.INP	2016.INP	
			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	2F	Build IT Apps & Infra	-	-	-	-	-	-	-	145	190	40	
2	0	#NODATA	-	-	-	-	-	-	-	-	-	-	
2	**Grand Total**		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**145**	**190**	**40**	

* Excludes projects greater than $1M

Table 3-10
Pacific Gas and Electric
2014 GRC
Exhibit (PG&E-7), Chapter 3
Transportation Services
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	04	Fleet / Auto Equip	102,379	51,639	66,135	63,298	75,920	137,870	145,464	132,908	118,453	117,141	Exh 7 Ch3, Table 3-3, page 3-19, Table 3-4, page 3-20
2	05	Tools & Equipment	895	985	929	2,998	961	900	908	933	965	999	Exh 7 Ch 3, Table 3-3, Table 3-4
3	20	DCPP Capital	25,686	-	-	20	-	-	-	-	-	-	Exh 7 Ch 3, Table 3-3
4	28	EV - Station Infrastructure	-	-	-	-	-	680	200	2,412	2,556	2,802	Exh 7 Ch3, Table 3-4
5	2F	Build IT Apps & Infra	-	-	3,757	7,370	64	-	-	3,050	2,360	1,235	Exh 7 Ch3, Table 3-3, Table 3-4
6	85	IT - Infrastructure	-	-	0	0	0	-	-	-	-	-	
7	**Total**		**128,960**	**52,625**	**70,821**	**73,686**	**76,946**	**139,450**	**146,572**	**139,302**	**124,334**	**122,177**	Exh 7 Ch3, Table 3-3, Table 3-4

Table 3-13
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-7), Chapter 3
Transportation Services
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	04	Fleet / Auto Equip	102,379	51,639	66,135	63,298	75,920	137,870	145,464	132,908	118,453	117,141	Exh 7 Ch3, Table 3-3, Table 3-4
2	05	Tools & Equipment	895	985	929	1,340	834	900	908	933	965	999	Exh 7 Ch 3, Table 3-3, Table 3-4
3	20	DCPP Capital	-	-	-	20	-	-	-	-	-	-	Exh 7 Ch 3, Table 3-3
4	28	EV - Station Infrastructure	-	-	-	-	-	680	200	2,412	2,556	2,802	Exh 7 Ch3, Table 3-4
5	2F	Build IT Apps & Infra	-	-	-	-	-	-	-	1,050	960	235	
6	85	IT - Infrastructure	-	-	-	-	-	-	-	-	-	-	
7	**Grand Total**		**103,274**	**52,625**	**67,064**	**64,658**	**76,754**	**139,450**	**146,572**	**137,302**	**122,934**	**121,177**	

* Excludes projects greater than $1M

Table 4-9
Pacific Gas and Electric
2014 GRC
Exhibit (PG&E-7), Chapter 4
Supply Chain-Materials Logistics and Planning
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	05	Tools & Equipment	198	508	299	486	265	369	372	382	396	410	
2	21	Misc Capital	(3,174)	305	392	377	372	439	451	463	476	489	
3	22	Maintain Buildings	-	-	-	-	-	-	-	2,736	2,464	630	
4	2F	Build IT Apps & Infra	-	-	-	8,382	15,820	600	-	4,267	2,103	-	
5	**Total**		**(2,976)**	**813**	**691**	**9,245**	**16,457**	**1,408**	**823**	**7,849**	**5,439**	**1,529**	

Table 4-12
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-7), Chapter 4
Supply Chain-Materials Logistics and Planning
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			2007.INP	2008.INP	2009.INP	2010.INP	2011.INP	2012.INP	2013.INP	2014.INP	2015.INP	2016.INP	
			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	05	Tools & Equipment	(0)	-	299	486	265	369	372	382	396	410	
2	21	Misc Capital	-	236	256	321	372	439	451	463	476	489	
3	22	Maintain Buildings	-	-	-	-	-	-	-	-	-	-	
4	2F	Build IT Apps & Infra	-	-	-	-	-	600	-	-	-	-	
5	**Grand Total**		**(0)**	**236**	**555**	**807**	**637**	**1,408**	**823**	**846**	**872**	**899**	

* Excludes projects greater than $1M

Table 5-11
Pacific Gas and Electric
2014 GRC
Exhibit (PG&E-7), Chapter 5
Supply Chain-Sourcing Operations
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

2007.INP	2008.INP	2009.INP	2010.INP	2011.INP	2012.INP	2013.INP	2014.INP	2015.INP	2016.INP

			Capital Expenditures									
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	2F	Build IT Apps & Infra	-	-	-	-	-	-	-	10,020	4,810	-	To Testimony, Table 5-5, Line 1
2	0	#NODATA	-	-	-	-	-	-	-	-	-	-	
2	**Total**		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**10,020**	**4,810**	**-**	

Table WP6-11
Pacific Gas and Electric
2014 General Rate Case
Exhibit (PG&E-7), Chapter 6
Real Estate
Recorded and Forecast Capital Expenditures by Major Work Category for 2007-2016
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	22	Maintain Buildings	27,302	37,064	36,222	41,367	34,175	48,976	40,448	45,674	44,770	46,338	To Testimony Table 6-42, Line 2 From Page WP6-22, Table WP6-16, Lines 1-2 and Page WP6-23, Table WP6-17, Lines 1-2
2	23	Implement Real Estate Strategy	1,830	7,183	414	14,643	6,397	-	-	35,378	51,373	36,352	To Testimony Table 6-42, Line 3 From Page WP6-22, Table WP6-16, Line 3 and Page WP6-23, Table WP6-17, Line 3
3	2F	Build IT Apps & Infra	-	-	-	-	-	-	-	550	-	-	To Testimony Table 6-42, Line 1 From Page WP6-23, Table WP6-17, Line 4
4	**Total**		**29,132**	**44,246**	**36,636**	**56,009**	**40,572**	**48,976**	**40,448**	**81,602**	**96,143**	**82,690**	To Testimony Table 6-42, Line 4 From Page WP6-22, Table WP6-16, Line 4 and Page WP6-23, Table WP6-17, Line 5

Table WP6-14
Pacific Gas and Electric
2014 General Rate Case
Exhibit (PG&E-7), Chapter 6
Real Estate
Recorded 2007-2011 and Forecast 2012-2016 Capital Expenditures Details - Other Wok
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	22	Maintain Buildings	16,824	22,107	16,708	15,236	8,175	18,079	26,550	29,413	22,198	23,594	
2	23	Implement Real Estate Strategy	534	24	-	-	1,471	-	-	-	-	-	
3	2F	Build IT Apps & Infra	-	-	-	-	-	-	-	550	-	-	
4	**Grand Total**		**17,358**	**22,131**	**16,708**	**15,236**	**9,646**	**18,079**	**26,550**	**29,963**	**22,198**	**23,594**	To Page WP6-18, Table WP6-12, Line 2

* Excludes projects greater than $1M

Table WP6-16
Pacific Gas and Electric
2014 General Rate Case
Exhibit (PG&E-7), Chapter 6
Real Estate
Recorded Capital Expenditures by Real Estate Program for 2007-2011
(Thousands of Nominal Dollars)

Line No.	Description	MWC	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	Reference
1	Base Building	22	25,610	36,441	33,436	34,733	29,043	
2	Seismic	22	1,692	623	2,785	6,634	5,132	
3	Implement Real Estate Strategy	23	1,830	7,183	414	14,643	6,397	
4	**Totals**		**29,132**	**44,246**	**36,636**	**56,009**	**40,572**	To Page WP6-17, Table WP6-11, Line 4

Line No.	Subprogram	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Workpaper Reference
1	Building Systems	9,914	15,013	20,051	12,206	11,119	25,291	25,635	23,676	30,908	23,882	From Page WP6-264, Table WP6-29, Line 348
2	Roofs	3,376	3,660	2,397	1,380	210	2,452	4,639	4,413	139	6,324	From Page WP6-267, Table WP6-30, Line 106
3	Interiors	5,760	3,640	1,545	2,750	2,069	3,834	3,597	7,488	5,331	3,528	From Page WP6-272, Table WP6-31, Line 207
4	Exteriors	477	664	159	858	134	747	1,021	2,016	3,136	3,173	From Page WP6-273, Table WP6-32, Line 31
5	Paving	149	784	1,496	1,413	1,645	11,594	2,073	2,629	1,896	3,752	From Page WP6-275, Table WP6-33, Line 41
6	Fencing, Yard Lighting and Landscaping	994	549	155	443	159	1,678	1,380	461	354	617	From Page WP6-277, Table WP6-34, Line 54
7	Security Systems	1,117	4,539	1,519	1,391	179	8	1,125	2,374	1,596	1,601	From Page WP6-278, Table WP6-35, Line 44
8	Operational and Emergency Work	3,584	5,151	5,134	12,386	8,768	1,603	978	1,067	1,009	3,461	From Page WP6-279, Table WP6-36, Line 40
9	Sustainability	239	2,441	981	1,906	4,759	-	-	-	-	-	
10	**Total**	25,610	36,441	33,436	34,733	29,043	47,207	40,448	44,125	44,369	46,338	To Page WP6-22, Table WP6-16, Line 1 and Page WP6-23, Table WP6-17, Line 1

Workpaper Table 7-9
Pacific Gas and Electric
2014 GRC
Exhibit (PG&E-7), Chapter 7
Environmental Program
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures									
No.	**MWC**	**Description**	**2007 Recorded**	**2008 Recorded**	**2009 Recorded**	**2010 Recorded**	**2011 Recorded**	**2012 Forecast**	**2013 Forecast**	**2014 Forecast**	**2015 Forecast**	**2016 Forcast**	**Reference**
1	05	Tools & Equipment	506	318	268	67	322	175	256	350	350	350	
2	12	Implement Environment Projects	2,998	3,425	4,747	3,717	3,649	4,941	6,330	6,956	6,123	6,250	
3	22	Maintain Buildings	-	-	-	155	-	-	-	-	-	-	
4	2F	Build IT Apps & Infra	-	-	-	397	1,499	800	-	4,220	1,250	775	
5	85	IT - Infrastructure	-	-	-	18	3	-	-	-	-	-	
6	**Total**		**3,504**	**3,743**	**5,015**	**4,353**	**5,473**	**5,916**	**6,586**	**11,526**	**7,723**	**7,375**	

Notes: Line 3 includes $155K in MWC 22 in 2010 for demolition of a building at San Luis Obispo Substation to all soil remediation.
Line 5 includes $18K in 2010 and $3K in 2011 in MWC 85 for non-IT-funded computer and phone infrastructure improvements at a San Francisco remediation site.
These costs do not affect future forecasts.

Line 1 from WP 7-31, line 9

Line 2 from WP 7-31, line 7

Line 4 from WP 7-31, line 8

Line 6 from WP 7-31, line 12 and from WP 7-16, line 3

Lines 1-6 to Exhibit (PG&E-7), Chapter 7, Table 7-2, page 7-43

Workpaper Table 7-12
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-7), Chapter 7
Environmental Program
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	05	Tools & Equipment	506	318	268	67	322	175	256	350	350	350	
2	12	Implement Environment Projects	1,955	2,303	3,491	3,464	3,570	4,941	6,330	5,937	6,123	6,250	
3	22	Maintain Buildings	-	-	-	155	-	-	-	-	-	-	
4	2F	Build IT Apps & Infra	-	-	-	-	-	715	-	900	550	75	
5	85	IT - Infrastructure	-	-	-	18	3	-	-	-	-	-	
6	**Grand Total**		**2,461**	**2,621**	**3,759**	**3,703**	**3,895**	**5,831**	**6,586**	**7,187**	**7,023**	**6,675**	

* Excludes projects greater than $1M

Notes: Line 3 includes $155K in MWC 22 in 2010 for demolition of a building at San Luis Obispo Substation to all soil remediatio n.
Line 5 includes $18K in 2010 and $3K in 2011 in MWC 85 for non-IT-funded computer and phone infrastructure improvements at a Sa n Francisco remediation site. These costs do not affect future forecasts.

Line 6 to WP 7-16, line 2

Recorded and Forecast Capital Costs 2007-2016, by IT Portfolio, Program, and Subprogram

Line N	Portfolio	Program	Subprogram	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012-2016
1	Baseline			-	-	-	-	-	-	-	-	-	-	-
2														
3	Technology	Lifecycle	Client Computing	15,622	14,850	13,935	12,749	15,044	14,912	37,186	22,643	23,416	26,778	124,935
4			Telecommunications Network	27,898	28,642	26,629	30,259	36,952	31,098	28,230	35,031	38,142	44,129	176,630
5	Reliability Portfolio		Datacenter Technology	11,770	15,083	14,572	23,487	28,225	4,708	15,780	36,538	36,325	42,361	135,712
6			Security Technology	187	94	12	13	14	-	10,520	11,467	6,221	8,741	36,949
7		**Lifecycle Total**		**55,477**	**58,669**	**55,148**	**66,508**	**80,236**	**50,718**	**91,716**	**105,679**	**104,104**	**122,009**	**474,226**
8														
9		Technology Reliability Projects	Historic Technology Reliability Projects	17,321	10,229	41,488	48,440	61,848	79,496	36,220	-	-	-	115,716
10			Disaster Recovery	-	-	-	-	-	-	-	33,882	43,972	18,746	96,600
11			Telecommunications Network Enhancement	-	-	-	-	-	-	-	39,400	30,900	30,100	100,400
12			Identity Access Management	-	-	-	-	-	6,100	9,500	10,000	9,000	8,000	42,600
13		**Projects Total**		**17,321**	**10,229**	**41,488**	**48,440**	**61,848**	**85,596**	**45,720**	**83,282**	**83,872**	**56,846**	**355,316**
14														
15		Continuous Improvement	Records Management	-	-	-	-	-	-	-	16,500	17,600	10,400	44,500
16			Service Management	-	-	-	-	-	-	5,260	6,860	6,840	7,435	26,395
17		**Continuous Improvement Total**		**-**	**-**	**-**	**-**	**-**	**-**	**5,260**	**23,360**	**24,440**	**17,835**	**70,895**
20														
21	**Technology Reliability Portfolio Total**			**72,798**	**68,898**	**96,636**	**114,948**	**142,084**	**136,314**	**142,696**	**212,321**	**212,416**	**196,690**	**900,437**

2014 GRC
A.12-11-009
Exhibit PG&E-9 Workpapers

Table 2-9
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-9), Chapter 2
Finance
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	2F	Build IT Apps & Infra	-	96	11,933	9,643	1,141	7,398	3,380	8,226	7,940	6,812	
2	**Total**		**-**	**96**	**11,933**	**9,643**	**1,141**	**7,398**	**3,380**	**8,226**	**7,940**	**6,812**	

Table 2-12
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-9), Chapter 2
Finance
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	2F	Build IT Apps & Infra	-	-	854	705	118	60	-	1,550	1,608	512	
2	**Grand Total**		**-**	**-**	**854**	**705**	**118**	**60**	**-**	**1,550**	**1,608**	**512**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Table 3-9
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-9), Chapter 3
Risk and Audit
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures									
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	23	Implement RealEstate Strategy	-	-	-	-	-	-	-	13,000	-	-	
2	2F	Build IT Apps & Infra	-	26	1,313	3,261	4,914	2,550	700	20,770	8,070	6,220	
3	**Total**		**-**	**26**	**1,313**	**3,261**	**4,914**	**2,550**	**700**	**33,770**	**8,070**	**6,220**	

Table 3-12
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-9), Chapter 3
Risk and Audit
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	23	Implement RealEstate Strategy	-	-	-	-	-	-	-	-	-	-	
2	2F	Build IT Apps & Infra	-	26	389	60	2	950	700	150	-	-	
3	**Grand Total**		**-**	**26**	**389**	**60**	**2**	**950**	**700**	**150**	**-**	**-**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Table 4-9
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-9), Chapter 4
Human Resources
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures										
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	05	Tools & Equipment	-	-	-	-	381	527	591	1,291	591	741	
2	22	Maintain Buildings	-	-	-	-	42	-	-	-	-	-	
3	2F	Build IT Apps & Infra	1,415	4,956	2,839	8,117	8,858	8,850	2,690	6,650	6,750	4,500	
4	85	IT - Infrastructure	841	68	(907)	(3)	-	-	-	-	-	-	
5	**Total**		**2,257**	**5,025**	**1,932**	**8,114**	**9,281**	**9,377**	**3,281**	**7,941**	**7,341**	**5,241**	

Table 4-12
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-9), Chapter 4
Human Resources
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			2007.INP	2008.INP	2009.INP	2010.INP	2011.INP	2012.INP	2013.INP	2014.INP	2015.INP	2016.INP	
			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	05	Tools & Equipment	-	-	-	-	381	527	591	1,291	591	741	
2	22	Maintain Buildings	-	-	-	-	42	-	-	-	-	-	
3	2F	Build IT Apps & Infra	-	-	-	-	-	600	-	750	-	300	
4	85	IT - Infrastructure	841	68	(907)	(3)	-	-	-	-	-	-	
5	**Grand Total**		**841**	**68**	**(907)**	**(3)**	**423**	**1,127**	**591**	**2,041**	**591**	**1,041**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual project s classified as greater than $1M in

Table 5-9
Pacific Gas and Electric
2014 GRC
Exhibit (PG&E-9), Chapter 5
Regulatory Relations
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures									
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	2F	Build IT Apps & Infra	-	-	-	-	-	-	-	2,200	1,800	800	
2	**Total**		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2,200**	**1,800**	**800**	

Table 5-12
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-9), Chapter 5
Regulatory Relations
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	2F	Build IT Apps & Infra	-	-	-	-	-	-	-	-	-	-	
2	**Grand Total**		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Table 6-9
Pacific Gas and Electric
2014 GRC
Exhibit (PG&E-9), Chapter 6
Law Organization
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures									
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forcast	Reference
1	2F	Build IT Apps & Infra	-	-	-	55	24	-	60	890	1,270	750	
2	**Total**		**-**	**-**	**-**	**55**	**24**	**-**	**60**	**890**	**1,270**	**750**	

Table 6-12
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-9), Chapter 6
Law Organization
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	2F	Build IT Apps & Infra	-	-	-	55	24	-	60	90	90	-	
2	**Grand Total**		**-**	**-**	**-**	**55**	**24**	**-**	**60**	**90**	**90**	**-**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Table 8-9
Pacific Gas and Electric
2014 GRC
Exhibit (PG&E-9), Chapter 8
Communications
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

			Capital Expenditures									
No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	01	IT - Desktop Computers	-	-	-	2	-	-	-	-	-	-	
2	2F	Build IT Apps & Infra	-	-	-	17,481	6,034	3,000	-	750	750	-	
3	**Total**		**-**	**-**	**-**	**17,483**	**6,034**	**3,000**	**-**	**750**	**750**	**-**	

Table 8-12
Pacific Gas and Electric Company
2014 GRC
Exhibit (PG&E-9), Chapter 8
Communications
Recorded and Forecast Capital Expenditures Details - Other Work*
(Thousands of Nominal Dollars)

			Capital Expenditures										
Line No.	MWC	Description	2007 Recorded	2008 Recorded	2009 Recorded	2010 Recorded	2011 Recorded	2012 Forecast	2013 Forecast	2014 Forecast	2015 Forecast	2016 Forecast	Reference
1	01	IT - Desktop Computers	-	-	-	2	-	-	-	-	-	-	
2	2F	Build IT Apps & Infra	-	-	-	-	-	-	-	-	-	-	
3	**Grand Total**		**-**	**-**	**-**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	

* Forecasted amounts exclude projects greater than $1M. The recorded amounts presented in this table exclude individual projects classified as greater than $1M in the 2011 GRC, and may differ from recorded amounts presented in other tables in this chapter.

Attachment D: Recorded Data from 2011 GRC Workpapers

2011 GRC
A.09-12-020
From workpapers to Exhibit 3

Table 2-2
Pacific Gas and Electric Company
MWC 57 - Electric Distribution Preventive Maintenance - Facts
Capital Expenditures by Sub-Program
Thousand of Nominal Dollars

Line No.	Work Description	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded	2009 Forecast	2010 Forecast	2011 Forecast	2012 Forecast	2013 Forecast	Reference
1	Overhead Notifications	$37,532	$37,482	$40,511	$43,910	$39,098	$41,384	$33,061	$42,051	$44,571	$47,243	
2	Underground Notifications	$12,879	$12,057	$12,862	$13,498	$13,235	$16,091	$9,143	$11,870	$12,581	$13,336	
3	Overhead ERR	$205	$3,511	$4,630	$4,860	$9,320	$17,301	$11,403	$6,756	$7,026	$7,307	
4	Underground ERR	$178	$1,406	$1,515	$1,631	$2,167	$3,368	$2,381	$1,411	$1,467	$1,526	
5	Bird Safe	$1,173	$765	$1,522	$2,087	$2,512	$2,168	$2,350	$1,704	$1,772	$1,843	
6	Bird Retrofits	$1,393	$1,715	$2,502	$1,367	$1,965	$1,891	$1,971	$2,019	$2,100	$2,184	
7	Network Work & Projects	$0	$0	$0	$658	$4,476	$4,660	$7,376	$21,517	$22,237	$15,361	
8	Idle Lines/Facilities	$0	$0	$0	$1	$513	$0	$1,900	$12,500	$12,500	$12,500	
9	Notification Major Projects	$4,500	$4,119	$7,666	$3,863	$2,082	$409	$835	$7,600	$7,600	$7,600	
10	Other Projects	$424	$536	$690	$895	$2,566	$3,793	$4,094	$2,154	$2,213	$2,282	
11	Subtotal	$58,284	$61,591	$71,896	$72,769	$77,934	$91,065	$74,514	$109,582	$114,067	$111,182	
12												
13	Streetlight LED Replacement Project	$0	$0	$0	$0	$0	$0	$0	$20,452	$20,452	$20,452	
14												
15	**Total MWC 57**	**$58,284**	**$61,591**	**$71,896**	**$72,769**	**$77,934**	**$91,065**	**$74,514**	**$130,034**	**$134,519**	**$131,634**	from WP 2-3, line 41 from WP 2-13, line 42 to WP 2-1, line 3 to WP 2-4, line 3

Table 2-3
Pacific Gas and Electric Company
Electric Distribution Preventative Maintenance
Five Years Recorded Capital Expenditures by Major Work Category - Units, U

MWC 57 Calcualation (Units, Unit Costs, $)

		Units					Unit Cost			
	Description	2004	2005	2006	2007	2008	2004	2005	2006	2007
1	Overhead Notifications	12,415	13,085	12,249	12,399	8,167	$3,023	$2,864	$3,307	$3,542
2	Underground Notifications	1,959	1,992	1,868	1,776	1,000	$6,576	$6,054	$6,885	$7,601
3	Overhead ERR	8	364	416	366	483	$25,858	$9,635	$11,136	$13,276
4	Underground ERR	7	75	58	73	99	$25,315	$18,842	$26,062	$22,207
5	Bird Safe	637	481	776	777	1,024	$1,841	$1,593	$1,960	$2,686
6	Bird Retrofits	933	758	932	717	846	$1,493	$2,263	$2,683	$1,905
7	**Subtotal**									
8										
9										
10										
11										
12	MWC 57 Detail for "Other"									
13		Units					Unit Cost			
14	Description	2004	2005	2006	2007	2008	2004	2005	2006	2007
15	**Network Work & Projects:**									
16	Fiber Optics									
17	SCADA Communication Upgrades									
18	Network Protector Replacement					37				
19	Network Transformer Replacements					35				
20	Network Transformer Replacements (High Rise)									
21	Manhole Covers									
22	**Subtotal Network Work & Projects**									

Idle Lines/Facilities					24				
Notification Major Projects	113	133	314	140	96	$39,820	$30,969	$24,413	$27,593
Other Projects and Miscellaneous:									
Permits									
Remove and Assess Transformers for PCB (in service)									
Remove and Assess Transformer for PCB (idle)									
Incandescent Street Light Replacement									
BART Auto Transfer Replacement Project									
North Bay Tower Project									
Miscellaneous Maintenance-related									
Subtotal Other Projects									
Subtotal									
Streetlight LED Replacement Project									
Total Electric Distribution Preventive Maintenance									
Comments:									
(A) Fiber Optics unit counting mechanism is not available for years 2008 and prior.									
(B) Costs are not applicable in years 2008 and prior.									
(C) Per unit and unit cost for 2007 are not applicable. Cost for 2007 represent material, material burden, estimating, and project management cost in preparation fc									
(D) Per unit and unit cost are not applicable in years 2007 and prior.									
(E) Permits unit counts are not applicable. Permit costs represent Electric Distribution's portion of the easement for forest services land. For 2004, cost were not a									
(F) BART auto transfer replacement units for 2008 are not applicable. Costs for 2008 represent estimating and project management costs in preparation of the follc									
(G) Per unit and unit cost are not applicable for the North Bay Tower Project (one project). Costs are not applicable in 2004.									
(H) Per unit and unit cost are not applicable.									

nit Costs, and Dollars

	Total Dollars (in Thousands)					Reference
2008	2004	2005	2006	2007	2008	
$4,787	$37,532	$37,482	$40,511	$43,910	$39,098	
$13,235	$12,879	$12,057	$12,862	$13,498	$13,235	
$19,296	$205	$3,511	$4,630	$4,860	$9,320	
$21,889	$178	$1,406	$1,515	$1,631	$2,167	
$2,453	$1,173	$765	$1,522	$2,087	$2,512	
$2,323	$1,393	$1,715	$2,502	$1,367	$1,965	
	$53,360	**$56,936**	**$63,541**	**$67,353**	**$68,297**	
	$42,553	$45,838	$53,608	$54,777	$57,765	
	$15,731	$15,753	$18,288	$17,335	$15,693	

except for 2008, notif major proj are assumed 50/50 OH/UG because although there are more OH proj, the UG proj are more costly

	Total Dollars (in Thousands)					
2008	2004	2005	2006	2007	2008	
	$0	$0	$0	$120	$676	(A)
	$0	$0	$0	$0	$0	(B)
$33,081	$0	$0	$0	$484	$1,224	(C)
$73,600	$0	$0	$0	$54	$2,576	(C)
	$0	$0	$0	$0	$0	(B)
	$0	$0	$0	$0	$0	(B)
	$0	**$0**	**$0**	**$658**	**$4,476**	

$21,375	**$0**	**$0**	**$0**	**$1**	**$513**	(D)
$21,688	**$4,500**	**$4,119**	**$7,666**	**$3,863**	**$2,082**	
	$0	$282	$488	$564	$459	(E)
	$0	$0	$0	$0	$0	(B)
	$0	$0	$0	$0	$0	(B)
	$0	$0	$0	$0	$0	(B)
	$0	$0	$0	$0	$5	(F)
	$0	$23	$122	$58	$2,433	(G)
	$424	$231	$79	$273	($331)	(H)
	$424	**$536**	**$690**	**$895**	**$2,566**	
	$58,284	**$61,591**	**$71,896**	**$72,769**	**$77,934**	
	$0	$0	$0	$0	$0	(B)
	$58,284	**$61,591**	**$71,896**	**$72,769**	**$77,934**	to WP 2-1, line 3 to WP 2-2, line 15

›r the following year's project.

pplicable.
›wing year's projects. Cost for year 2007 and prior are not applicable.

Pacific Gas and Electric Company

Table 3-1
Pacific Gas and Electric Company
Pole Replacement
Capital Expenditures by Major Work Category - Recorded
(Thousands of Nominal Dollars)

No.		MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded	Reference
1		7	E Dist Replace/Reinforce Poles	$ 59,446	$ 40,134	$ 37,772	$ 28,773	$ 33,292	
2			**Overall Result**	**$59,446**	**$40,134**	**$37,772**	**$28,773**	**$33,292**	from WP 3-2, line 3

Table 3-2
Pacific Gas and Electric company
Five Years Recorded and Forecast Pole Replacement Unit Costs (Capital expenditures – MWC 07)
(Nominal SAP Dollars)

Line No.	Pole Replacement	Metric	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded	2009 Forecast	2010 Forecast	2011 Forecast	2012 Forecast	2013 Forecast	Reference
1	Poles Replaced	Poles	10,455	6,499	5,017	3,172	2,934	3,790	3,477	5,000	5,050	5,000	
2	Unit Cost	$ Per Pole	$5,686	$6,175	$7,529	$9,071	$11,347	$11,291	$10,903	$12,000	$12,500	$13,000	
3	**Dollars**		**$ 59,446**	**$ 40,134**	**$ 37,772**	**$ 28,773**	**$33,292**	**$42,796**	**$37,913**	**$60,000**	**$63,125**	**$65,000**	to WP 3-1, line 2 to WP 3-3, line 4 to Exhibit 3, Chapter 3, page 3-8, Table 3-2

Table 6-1
Pacific Gas and Electric Company
New Business and WRO
Capital Expenditures by Major Work Category - Recorded
(Thousands of Nominal Dollars)

No.	MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded	Reference To/From	WP	Line
1	10	E Dist Work Requested by Other	$ 25,858	$ 31,314	$ 45,204	$ 50,360	$ 50,747	From	6-5, 6-7	6, 107
2	16	E Dist Customer Connects	$ 216,334	$ 241,362	$ 258,865	$ 298,335	$ 279,057	From	6-3, 6-4, 6-8	9, 7, 240
3	29	G Dist Customer Connects	$ 60,117	$ 75,641	$ 75,522	$ 67,920	$ 46,371	From	6-3, 6-4, 6-9	18,14, 321
4	51	G Dist Work Requested by Other	$ 12,085	$ 14,353	$ 19,516	$ 15,988	$ 27,101	From	6-5, 6-11	3, 403
5	96	Separately Funded Capital	$ 0	$ 1,797	$ 11,353	$ 7,461	$ 9,001	From	6-10	416
6		**Overall Result**	**$314,393**	**$364,466**	**$410,461**	**$440,063**	**$412,277**			

Table 6-5
Pacific Gas and Electric Company
New Business 2004 - 2013 Recorded and Forecast SubProgram Expenditures and Unit Costs

Line No.	Work Category	Unit of Measure	2004 Results Units Completed	2004 Results Unit Cost ($)	2004 Results Total Spend ($000)	2005 Results Units Completed	2005 Results Unit Cost ($)	2005 Results Total Spend ($000)	2006 Results Units Completed	2006 Results Unit Cost ($)	2006 Results Total Spend ($000)	2007 Results Units Completed	2007 Results Unit Cost ($)	2007 Results Total Spend ($000)	2008 Results Units Completed	2008 Results Unit Cost ($)	2008 Results Total Spend ($000)	Reference To/From	WP	Line
1	**MWC 16**																			
2	Residential	Customer Connects	75,559	$ 1,651	$ 124,754	70,977	$ 1,971	$ 139,863	62,586	$ 2,182	$ 136,586	49,101	$ 2,765	$ 135,768	34,387	$ 2,747	$ 94,448	From To	6-62 6-3	1 1
3	Non Residential	Customer Connects	12,325	$ 4,114	$ 50,699	14,064	$ 4,009	$ 56,378	15,788	$ 4,441	$ 70,121	14,688	$ 6,475	$ 95,107	14,525	$ 9,030	$ 131,160	From To	6-62 6-3	2 3
4	PV/PEV		-		$ -	-		$ -	-		$ -	-		$ -	-		$ -		6-3	6
5	Transformers				$ 40,881			$ 45,130			$ 52,158			$ 67,522			$ 53,464	From To	6-19 6-3	4 5
6	Other (Allocated Cost) / Unit Cost Rounding Error				$ -			$ (9)			$ -			$ (62)			$ (15)	To	6-3	7
7	**MWC 16 Total**				**$ 216,334**			**$ 241,362**			**$ 258,865**			**$ 298,335**			**$ 279,057**	To	6-1	2
8																				
9	**MWC 29**																			
10	Residential	Customer Connects	71,366	$ 685	$ 48,888	71,001	$ 855	$ 60,704	58,580	$ 1,008	$ 59,030	43,213	$ 1,225	$ 52,921	26,570	$ 1,035	$ 27,501	From To	6-62 6-3	3 10
11	Non Residential	Customer Connects	4,378	$ 1,891	$ 8,279	5,062	$ 2,384	$ 12,069	5,377	$ 2,650	$ 14,247	5,069	$ 2,683	$ 13,602	4,234	$ 3,947	$ 16,713	From To	6-62 6-3	4 12
12	Regulators				$ 2,950			$ 2,868			$ 2,303			$ 1,421			$ 2,251	From To	6-29 6-3	3 14
13	Other (Allocated Cost) / Unit Cost Rounding Error				$ -			$ -			$ (58)			$ (24)			$ (94)	To	6-3	16
14	**MWC 29 Total**				**$ 60,117**			**$ 75,641**			**$ 75,522**			**$ 67,920**			**$ 46,371**	To	6-1	3

Line No.	Work Category	Unit of Measure	2009 Forecast Units Completed	2009 Forecast Unit Cost ($)	2009 Forecast Total Spend ($000)	2010 Forecast Units Completed	2010 Forecast Unit Cost ($)	2010 Forecast Total Spend ($000)	2011 Forecast Units Completed	2011 Forecast Unit Cost ($)	2011 Forecast Total Spend ($000)	2012 Forecast Units Completed	2012 Forecast Unit Cost ($)	2012 Forecast Total Spend ($000)	2013 Forecast Units Completed	2013 Forecast Unit Cost ($)	2013 Forecast Total Spend ($000)	Reference To/From	WP	Line
15	**MWC 16**																			
16	Residential	Customer Connects	32,125	$ 3,038	$ 97,596	43,775	$ 2,502	$ 109,525	61,874	$ 2,369	$ 146,574	73,709	$ 2,765	$ 174,047	75,226	$ 2,437	$ 183,326	From To	6-62 6-3	1 1
17	Non Residential	Customer Connects	14,072	$ 7,113	$ 100,094	14,357	$ 7,345	$ 105,452	14,570	$ 7,582	$ 110,470	14,743	$ 6,475	$ 115,467	14,985	$ 8,083	$ 121,124	From To	6-62 6-3	2 3
18	PV/PEV		-		$ -	-		$ -	-		$ 2,000	-		$ 2,000	-		$ 4,500	To	6-3	6
19	Transformers				$ 71,744			$ 81,191			$ 97,762			$ 105,419			$ 107,562	From To	6-19 6-3	4 5
20	Other (Allocated Cost) / Unit Cost Rounding Error				$ 14,492			$ (17,050)			$ -			$ -			$ -	To	6-3	7
21	**MWC 16 Total**				**$ 283,926**			**$ 279,118**			**$ 356,806**			**$ 396,933**			**$ 416,512**	To	6-1	2
22																				
23	**MWC 29**																			
24	Residential	Customer Connects	25,625	$ 1,320	$ 33,825	37,943	$ 1,039	$ 39,415	55,456	$ 921	$ 51,086	66,375	$ 1,225	$ 59,363	67,755	$ 922	$ 62,470	From To	6-62 6-3	3 10
25	Non Residential	Customer Connects	4,120	$ 2,891	$ 11,911	4,204	$ 2,988	$ 12,562	4,263	$ 3,089	$ 13,168	4,311	$ 2,683	$ 13,739	4,379	$ 3,287	$ 14,394	From To	6-62 6-3	4 12
26	Regulators				$ 1,707			$ 3,597			$ 3,811			$ 4,035			$ 4,189	From To	6-29 6-3	3 14
27	Other (Allocated Cost) / Unit Cost Rounding Error				$ 5,366			$ (10,474)			$ -			$ -			$ -	To	6-3	16
28	**MWC 29 Total**				**$ 52,809**			**$ 45,100**			**$ 68,065**			**$ 77,137**			**$ 81,053**	To	6-1	3

Table 6-6

Pacific Gas and Electric Company

WRO 2004 - 2013 Recorded and Forecast SubProgram Expenditures and Unit Costs

Line No.	Work Category	2004 Results	2005 Results	2006 Results	2007 Results	2008 Results	2009 Results	2010 Results	2011 Results	2012 Results	2013 Results	Reference To/From	WP	Line
		Total Spend ($000)	Total Spend ($000)	Total Spend ($000)	Total Spend ($000)	Total Spend ($000)	Total Spend ($000)	Total Spend ($000)	Total Spend ($000)	Total Spend ($000)	Total Spend ($000)			
1	**MWC 10**													
2	New Business Segment	$ 9,586	$ 10,737	$ 20,120	$ 24,530	$ 13,663	$ 20,994	$ 22,820	$ 27,498	$ 30,935	$ 32,791			
3	Governmental Segment	$ 16,257	$ 20,078	$ 24,553	$ 24,607	$ 36,971	$ 36,624	$ 37,869	$ 37,225	$ 33,875	$ 30,657			
4	Other (Allocated)	$ 15	$ 499	$ 531	$ 1,223	$ 113	$ (3,525)	$ (381)	$ -	$ -	$ -			
5														
6	**MWC 10 Total**	**$ 25,858**	**$ 31,314**	**$ 45,204**	**$ 50,360**	**$ 50,747**	**$ 54,093**	**$ 60,308**	**$ 64,723**	**$ 64,810**	**$ 63,448**	To	6-1	1
7														
8	**MWC 51**													
9	New Business Segment	$ (157)	$ 1,139	$ 1,178	$ 1,461	$ 1,777	$ 1,005	$ 1,142	$ 1,412	$ 1,607	$ 1,689			
10	Governmental Segment	$ 12,238	$ 13,193	$ 18,238	$ 14,052	$ 25,180	$ 20,914	$ 21,625	$ 21,257	$ 19,344	$ 17,506			
11	Other (Allocated)	$ 4	$ 21	$ 100	$ 475	$ 144	$ (1,873)	$ 1,317	$ -	$ -	$ -			
12														
13	**MWC 51 Total**	**$ 12,085**	**$ 14,353**	**$ 19,516**	**$ 15,988**	**$ 27,101**	**$ 20,046**	**$ 24,084**	**$ 22,669**	**$ 20,951**	**$ 19,195**	To	6-1	4

Note minor differences due to rounding

Pacific Gas and Electric Company

Table 7-2

Pacific Gas and Electric Company

Rule 20A

Capital Expenditures by Major Work Category - Recorded

(Thousands of Nominal Dollars)

No.		MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded	Reference
1		30	E Dist WRO - Rule 20A	$ 49,303	$ 41,998	$ 68,357	$ 45,385	$ 39,916	from WP 7-3, line 22
2									
3			**Overall Result**	**$49,303**	**$41,998**	**$68,357**	**$45,385**	**$39,916**	

Pacific Gas and Electric Company

Table 8-1
Pacific Gas and Electric Company
Substation Asset Management
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.	MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded	2009 Forecast	2010 Forecast	2011 Forecast	2012 Forecast	2013 Forecast
1	48	E Dist Replace Subst Equipment	$ 20,679	$ 15,905	$ 20,592	$ 16,994	$ 28,579	$ 34,466	$ 35,521	$ 72,796	$ 98,035	$ 107,091
2	54	E Dist Replace Subst Transform	$ 28,025	$ 14,058	$ 17,094	$ 33,239	$ 46,514	$ 50,143	$ 52,606	$ 79,545	$ 91,100	$ 70,200
3	58	E Dist Repl Substation Safety	$ 1,261	$ 3,370	$ 2,209	$ 3,341	$ 1,997	$ 758	$ 2,425	$ 6,360	$ 2,560	$ 2,560
4	59	E Dist Repl Subst-Emergency	$ 16,147	$ 22,165	$ 28,182	$ 32,945	$ 33,060	$ 23,434	$ 23,940	$ 32,000	$ 32,000	$ 32,000
5		**Overall Result**	**$66,113**	**$55,499**	**$68,077**	**$86,519**	**$110,151**	**$108,800**	**$114,492**	**$190,701**	**$223,695**	**$211,851**

To testimony page 8-3

Pacific Gas and Electric Company

Table 9 - 1
Pacific Gas and Electric Company
Electric Distribution Capacity
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.	MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1	6	E Distr New Capacity - Line	$ 28,813	$ 39,639	$ 70,234	$ 75,104	$ 88,699
2	46	E Distr New Capacity - Substat	$ 16,405	$ 34,800	$ 52,628	$ 73,552	$ 106,621
3							
4		**Overall Result**	**$45,218**	**$74,439**	**$122,862**	**$148,656**	**$195,320**

Pacific Gas and Electric Company

Table 10-1
Pacific Gas and Electric Company
Electric Distribution Reliability
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.		MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1		8	E Dist Mitigate Recur Outages	$ 8,766	$ 9,840	$ 13,054	$ 11,054	$ 9,925
2		49	E T&D Mainline Prot & Rebuild	$ 4,325	$ 6,966	$ 12,139	$ 21,896	$ 30,015
3			**Overall Result**	**$13,092**	**$16,806**	**$25,193**	**$32,950**	**$39,940**

Pacific Gas and Electric Company

Table 10-7
Pacific Gas and Electric Company
Miscellaneous Capital Tools and Overdrawn Material (MWC 05)
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.		MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1		5	Tools & Equipment	(2,090)	(1,433)	(1,639)	229	(1,565)
2			**Overall Result**	**($2,090)**	**($1,433)**	**($1,639)**	**$229**	**($1,565)**

Pacific Gas and Electric Company

Table 11-1

Pacific Gas and Electric Company
Distribution Automation and System Protection
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.		MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1		9	E Dist Automation & Protection	$ 4,948	$ 4,605	$ 4,893	$ 5,688	$ 5,694
2			**Overall Result**	**$4,948**	**$4,605**	**$4,893**	**$5,688**	**$5,694**

Pacific Gas and Electric Company

Table 12-1
Pacific Gas and Electric Company
Underground Asset Management
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.		MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1		56	E Dist Replace Underground Cbl	$ 16,447	$ 35,102	$ 33,209	$ 30,033	$ 21,897
2								
3			**Overall Result**	**$16,447**	**$35,102**	**$33,209**	**$30,033**	**$21,897**
4								
5								
6			2004 to 2008 average expenditure	$ 27,338				
7			2005 to 2007 average expenditure	$ 32,781				

Pacific Gas and Electric Company

Table 13-1
Pacific Gas and Electric Company
Electric Distribution Operations
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.		MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1		9	E Dist Automation & Protection	$ 0	$ 0	$ 2	$ 3,049	$ 2,911
2			**Overall Result**	**$0**	**$0**	**$2**	**$3,049**	**$2,911**

Pacific Gas and Electric Company

Table 14-1
Pacific Gas and Electric Company
Electric Emergency Recovery
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.		MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1		17	E Dist Emergency Response	$ 64,234	$ 66,428	$ 77,318	$ 80,730	$ 98,301
2		95	ED Major Emergency	$ 16,111	$ 15,071	$ 58,140	$ 26,186	$ 69,139
3			**Overall Result**	**$80,346**	**$81,499**	**$135,457**	**$106,916**	**$167,440**

MWC 95 2006 and 2008 recorded expenditures do not include reductions for CEMA.

Table 14-6
Pacific Gas and Electric Company
MWC 17 - Electric Distribution Emergency Response
5 Years Recorded and Forecast Capital Expenditures
Thousand of Nominal Dollars

Line No.	Mat Code		2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded	2009 Forecast	2010 Forecast	2011 Forecast	2012 Forecast	2013 Forecast	
1	17B	Routine Emergency Overhead	45,874	47,895	56,494	56,217	70,727	$73,854	$78,321	$83,109	$88,423	$94,075	To WP 14-7
2													To WP 14-7
3	17C	Routine Emergency Undergroun	18,734	12,896	12,778	15,196	26,471	$30,249	$35,241	$41,113	$48,147	$56,387	
4													
5	17P	Emergency Greater then 25K pe	-	6,013	9,412	8,954	549						
6		Adjustments	(374)	(376)	(1,366)	368	554	1,927	(3,648)	(5)	(7)	(10)	
7		Total MWC 17	64,234	66,428	77,318	80,735	98,301	106,031	109,914	124,217	136,563	150,452	

** MAT 17P is used for capital routine emergencies that exceed $25K per EC tag. Dollars for this MAT are not a forecasted component of MWC 17.

Pacific Gas and Electric Company

Table 19-1
Pacific Gas and Electric Company
Gas Distribution Capital
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.	MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1	14	Gas Pipeline Replacement Pgm	$ 47,936	$ 46,968	$ 60,168	$ 76,916	$ 105,625
2	27	Gas Meter Protection-Capital	$ 31	$ 33	$ 0	$ 15	$ 75
3	47	G Dist New Capacity - Gas	$ 6,099	$ 9,063	$ 11,599	$ 8,149	$ 12,063
4	50	G Dist Reliability	$ 10,215	$ 11,307	$ 12,128	$ 10,844	$ 14,146
5	52	G Dist Emergency Response	$ 402	$ 95	$ 286	$ 256	$ 375
6	78	Manage Buildings	$ 0	$ 0	$ 0	$ 29	$ 2,978
7		**Overall Result**	**$64,682**	**$67,466**	**$84,182**	**$96,210**	**$135,262**

Pacific Gas and Electric Company

Table 19-4
Pacific Gas and Electric Company
Gas Distribution Capital
Forecast Capital Expenditures - Projects > $ 1 Million
(Thousands of Dollars)

							CAPITAL EXPENDITURES						
No.	Project No.	Project Description	MWC	Functional Group	Operative Date	UCC	2008 Recorded	2009 Forecast	2010 Forecast	2011 Forecast	2012 Forecast	2013 Forecast	
1	5506443	Gas Pipeline Replacemet Program-San Franci	14	GDP	as installed	601	$ 53,172	$ 49,500	$ 50,000	$ 87,305	$ 92,017	$ 129,320	From p. WP 19-12
2	5507199	EB Copper Service Replacement	14	GDP	as installed	601	$ 18,463	$ 4,066	$ 772	$ 43,595	$ 45,408	$ 15,629	From p. WP 19-13
3	5500746	Incr. Capacity G-CC	47	GDP	as installed	601	$ 347	$ 10	$ 10	$ 13,550	$ 13,950	$ 14,360	From p. WP 19-14
4	5500640	Impr Rel/Dep G-CC	50	GDP	as installed	601	$ 0	$ 0	$ 0	$ 21,940	$ 22,930	$ 23,680	From p. WP 19-15
5	5727518	Simulate City	78	CST	10/16/2008	300	$ 2,978	$ 50	$ 0	$ 0	$ 0	$ 0	
6		**Total 57* Projects > $1mil**					**$ 74,960**	**$ 53,626**	**$ 50,782**	**$ 166,390**	**$ 174,305**	**$ 182,989**	
7		**Total Other Projects**					**$ 60,303**	**$ 71,920**	**$ 84,607**	**$ 910**	**$ 938**	**$ 967**	From p. WP 19-11 line 204 and line 6 ab c
8		**TOTAL CAPITAL EXPENDITURES**					**$ 135,262**	**$ 125,546**	**$ 135,389**	**$ 167,300**	**$ 175,243**	**$ 183,956**	To p. WP 19-2 line 7 (table 19-2),

Notes:
The first four programs listed above represent a group of individual projects (total > $1 million) that are managed single programs across the PG&E system.

The 2008 recorded and 2009 and 2010 forecasted capital expenditures are the actual expenditures in San Francisco division for GPRP, East Bay Division for Copper Services, and Central Coast for Capacity and Rel/Dep. The expenditures in other divisions are shown in table 19-5 "Forecast Capital Expenditures- Other Projects"

The 2011 - 2013 forecasted capital expenditures listed above represent the total forecast for the entire PG&E system for each of the four specific programs.

The last project listed above (Simulate City, Project No. 5727518, MWC 78) was a single completed project with no future forecasts. Therefore, a Capital Project Summary was not created.

Table 23-1
Pacific Gas and Electric Company
Applied Technology Services
Capital Expenditures by Major Work Category- Recorded
(Thousands of Nominal Dollars)

No.		MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded	Reference
1		5	Tools & Equipment	$9	$44	$454	$200	$438	
2		78	Manage Buildings	$0	$0	$19	$66	$9	
3			**Overall Result**	**$9**	**$44**	**$473**	**$266**	**$447**	From WP 23-3, Line 7

2011 GRC
A.09-12-020
From workpapers to Exhibit 4

WORKPAPER TABLE 6-1
PACIFIC GAS AND ELECTRIC COMPANY
METER PURCHASE AND MAINTENANCE
CAPITAL EXPENDITURES BY MAJOR WORK CATEGORY
2004 - 2008 Recorded Data
(Thousands of Nominal Dollars)

No.	MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded	Reference
1	5	Tools & Equipment	$ 0	$ 213	$ 130	$ 178	$ 210	to WP table 6-3, line 4
2	25	E Meters	$ 23,359	$ 32,007	$ 30,563	$ 33,037	$ 34,256	to WP table 6-3, line 14
3	74	G Meters	$ 30,519	$ 33,141	$ 30,459	$ 29,443	$ 33,146	to WP table 6-3, line 24
4		**Overall Result**	**$53,878**	**$65,361**	**$61,152**	**$62,659**	**$67,612**	to WP table 6-4, line 7 from Testimony page 6-1, line 25

WORKPAPER TABLE 8-1
PACIFIC GAS AND ELECTRIC COMPANY
2011 GENERAL RATE CASE
CHAPTER 8 - METER TO CASH
CAPITAL EXPENDITURES BY MAJOR WORK CATEGORY - RECORDED
2004 RECORDED - 2008 RECORDED
(THOUSANDS OF NOMINAL DOLLARS)

Line No.	MWC	Description	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1	87	Office Equipment	104		529	4,172	0
2							
3		**Total Capital Expenditures**	104	0	529	4,172	0

Workpaper Table 10-2
Pacific Gas and Electric Company
Demand-Side Management
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.	MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1	78	Manage Buildings	$ 0	$ 0	$ 0	$ 0	$ 0
2		**Overall Result**	**$0**	**$0**	**$0**	**$0**	**$0**

Pacific Gas and Electric Company

WORKPAPER TABLE 11-1
PACIFIC GAS AND ELECTRIC COMPANY
CLEAN AIR TRANSPORTATION
Capital Expenditures by Major Work Category
(Thousands of Nominal SAP Dollars)

No.		MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded	
1		31	NGV - Station Infrastructure	$ 1,497	$ 1,662	$ 1,782	$ 3,612	$ 4,300	
2			**Overall Result**	**$1,497**	**$1,662**	**$1,782**	**$3,612**	**$4,300**	from testimony table 11-2 line 7

2011 GRC
A.09-12-020
From workpapers to Exhibit 5

Pacific Gas and Electric Company

Table 3-2
Pacific Gas and Electric Company
Hydro Operations Costs
Historical Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.		MWC	Description	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1		3	Office Furniture & Equipment	-	-	-	-	193
2		5	Tools & Equipment	429	827	643	530	724
3		11	Power Gen Licenses & Permits	28,520	25,087	18,591	23,618	30,701
4		12	Environmental	1,877	1,623	2,681	2,335	3,203
5		13	Power Gen Safety & Regulatory	2,207	8,646	11,071	6,751	18,749
6		81	Power Gen Maint Relabil/Avail	25,584	39,769	37,637	43,099	57,625
7		85	IT - Infrastructure	-	-	-	4	(4)
8			**Overall Result**	**58,617**	**75,953**	**70,624**	**76,338**	**111,192**
				27,076	41,006	50,056	179,451	538,339

Pacific Gas and Electric Company

Table 4-1
Pacific Gas and Electric Company
Nuclear Operations Costs
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.	MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1	3	Office Furniture & Equipment	$ 159	$ 159	$ 210	$ 131	$ 209
2	4	Fleet / Auto Equip	$ 706	$ 617	$ 1,373	$ 1,944	$ 1,333
3	5	Tools & Equipment	$ 1,815	$ 1,086	$ 1,011	$ 1,154	$ 2,057
4	20	DCPP Capital	$ 110,582	$ 137,834	$ 166,761	$ 215,892	$ 363,412
5							
6		**Overall Result**	**$113,262**	**$139,696**	**$169,355**	**$219,121**	**$367,011**

Table 5-44
Pacific Gas and Electric Company
Fossil and Other Generation Operations Costs
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.	MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1	3	Office Furniture & Equipment	$ 8	$ 1	$ 2	$ 19	$ 0
2	5	Tools & Equipment	$ 103	$ 4	$ 19	$ 0	$ 0
3	12	Environmental	$ 40	$ 248	$ 24	$ 0	$ 0
4	78	Manage Buildings	$ 0	$ 0	$ 0	$ 4,510	-$ 30
5	81	Power Gen Maint Relabil/Avail	$ 1,492	$ 1,237	$ 12,419	$ 136,352	$ 480,714
6		**Overall Result**	**$1,643**	**$1,490**	**$12,464**	**$140,881**	**$480,684**

2011 GRC
A.09-12-020
From workpapers to Exhibit 7

Pacific Gas and Electric Company

Table 2-2
Pacific Gas and Electric Company
Information Technology Costs

Recorded Capital Costs by Major Work Category
(Thousands of Nominal Dollars)

Line No.	MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1	1	IT - Desktop Computers	$ 2,002	$ 1,062	$ 2,282	$ 1,488	$ 2
2	2	IT - Voice Communications	6,527	4,518	6,072	240	(0)
3	3	Office Furniture & Equipment	66	44	1,511	983	124
4	5	Tools & Equipment	155	129	1,137	343	933
5	9	E Dist Automation & Protection	-	56	92	123	-
6	11	Power Gen Licenses & Permits	-	-	47	-	-
7	13	Power Gen Safety & Regulatory	-	-	7	(1)	-
8	20	DCPP Capital	2,002	7,689	18,123	14,716	29,030
9	53	IT - Applications	1,370	10,927	95,684	120,979	173
10	77	IT - CIS	10,093	4,172	1,320	282	-
11	80	Computer Network Facil & Equip	1,049	537	293	7	-
12	81	Power Gen Maint Relabil/Avail	197	2,348	3,704	257	-
13	85	IT - Infrastructure	34,658	62,077	92,032	108,101	122,397
14	87	Office Equipment	-	-	-	-	79
15		**Overall Result**	**$ 58,119**	**$ 93,560**	**$ 222,303**	**$ 247,518**	**$ 152,739**

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Table 3-X
Pacific Gas and Electric Company
Fleet Services
Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

No.	MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1	4	Fleet / Auto Equip	$ 46,127	$ 31,341	$ 61,839	$ 102,379	$ 51,639
2	5	Tools & Equipment	$ 226	$ 658	$ 518	$ 895	$ 985
3	20	DCPP Capital	$ 0	$ 0	$ 0	$ 25,686	$ 0
4		**Overall Result**	**$46,353**	**$31,999**	**$62,357**	**$128,960**	**$52,625**

Table 4-1
Pacific Gas and Electric Company
Supply Chain - Materials Handling and Inventory
Recorded Capital Expenditures by Major Work Category
(Thousands of Nominal Dollars)

Line No.	MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1	5	Tools & Equipment	$ 138	$ 252	$ 29	$ 198	$ 508
2	19	Special Programs	$ 0	$ 0	$ 0	($3,174)	-$ 98
3	20	DCPP Capital	$ 357	$ 370	$ 374	$0	$ 403
4		**Overall Result**	**$495**	**$622**	**$403**	**($2,976)**	**$813**

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Table 7-2

Pacific Gas and Electric Company

Environmental Program

Capital Expenditures by Major Work Category

(Thousands of Nominal Dollars)

No.		MWC	Subprogram/Title	2004 Recorded	2005 Recorded	2006 Recorded	2007 Recorded	2008 Recorded
1		12	Environmental	$ 1,782	$ 3,282	$ 3,656	$ 2,011	$ 4,411
2								
3			**Overall Result**	**$1,782**	**$3,282**	**$3,656**	**$2,011**	**$4,411**

Line 3 from Page WP 7-3, line 6; WP 7-5, line 5

Attachment E.: A.09-12-020, Exhibit PG&E-5, excerpt

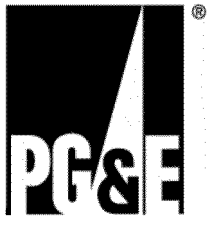
Application: _____
(U 39 M)
Exhibit No.: (PG&E-5)
Date: December 21, 2009
Witness: Various

PACIFIC GAS AND ELECTRIC COMPANY

2011 GENERAL RATE CASE

PREPARED TESTIMONY

EXHIBIT (PG&E-5)
ENERGY SUPPLY



(PG&E-5)

PACIFIC GAS AND ELECTRIC COMPANY
ENERGY SUPPLY

TABLE OF CONTENTS

PACIFIC GAS AND ELECTRIC COMPANY

CHAPTER 5

FOSSIL AND OTHER GENERATION OPERATIONS COSTS

PACIFIC GAS AND ELECTRIC COMPANY
CHAPTER 5
FOSSIL AND OTHER GENERATION OPERATIONS COSTS

A. Introduction

1. Scope and Purpose

The purpose of this chapter is to demonstrate that Pacific Gas and Electric Company's (PG&E or the Company) forecasts for expense and capital expenditures to operate and maintain its Fossil and other non-hydro generation facilities are reasonable and should be adopted by the California Public Utilities Commission (CPUC or Commission).

PG&E's fossil generation fleet consists of the Gateway Generating Station (GGS or Gateway) which began commercial operations on January 4, 2009, and the Colusa Generating Station (CGS or Colusa) and the Humboldt Bay Generating Station (HBGS or Humboldt), which are scheduled to come on line in November and July 2010, respectively. These generating units have a combined maximum normal operating capacity of 1,400 megawatts (MW).

The existing Humboldt Bay Power Plant (HBPP) will be retired after the commissioning of HBGS is completed.

Also discussed in this chapter are three small photovoltaic (PV) generation facilities in San Francisco that are owned and operated by PG&E.

Commission adoption of PG&E's expense and capital forecasts for operating and maintaining these environmentally responsible generation facilities is necessary to ensure safe, reliable, and cost-effective generation from these assets in 2011 and beyond.

2. Summary of Request

PG&E requests that the Commission put into base rates its capital expenditure forecasts for 2009, 2010, and 2011 for these facilities, the majority of which were already adopted by the Commission in separate decisions authorizing PG&E to construct, own and operate the Gateway, Colusa, and Humboldt Bay generating stations. The capital expenditure

forecasts are $414.5 million, $258.8 million and $1.7 million for 2009, 2010, and 2011, respectively. PG&E further requests that the Commission adopt PG&E's 2011 forecast of $47.7 million for fossil and other generation Operations and Maintenance (O&M) expense.

PG&E is also providing specific forecasts of capital for 2012 and 2013 to support the generation attrition proposal in Exhibit (PG&E-9), Chapter 2. PG&E requests that the Commission reflect in the attrition adjustments for 2012 and 2013 PG&E's capital forecast of $3.1 million for 2012 and $3.1 million for 2013.

In addition, PG&E requests that the Commission authorize its forecast 2011 weighted average fuel oil inventory of $1.5 million. Finally, PG&E requests that the Commission authorize decommissioning forecasts of $31.9 million, $45.4 million, $30.8 million, $20.2 million and $4.0 million for years 2009 through 2013.

3. Support for Request

PG&E's capital and expense forecasts for its fossil and other generation operations are reasonable and justified because they ensure continued safe, reliable, and environmentally responsible operation of these generation facilities. The following are the components of the forecasts for fossil and other generation operations:

- Gateway Generating Station
- Colusa Generating Station
- Humboldt Bay Generating Station
- San Francisco PV Generating Facilities

Maintaining and improving the reliability and performance of these cost-effective, environmentally responsible generation assets is critical to ensuring that they are available to customers in the General Rate Case (GRC) timeframe and beyond.

4. Organization of the Remainder of This Chapter

The remainder of this chapter is organized as follows:

- Section B – Overview of Fossil and Other Generation Operations
- Section C – Estimating Method

- Section D – Activities and Costs by Subprogram/Major Work Category
- Section E – Cost Tables

B. Overview of Fossil and Other Generation Operations

This section describes the Fossil and Other Generation Operations Program, including background information on the Gateway, Colusa, and Humboldt Generating Stations and PG&E's existing PV generating facilities. Under the Fossil and Other Generation Operations Program, PG&E safely and reliably operates the fossil and PV facilities in compliance with all applicable regulations.

1. Gateway Generating Station

PG&E's GGS is a 530 MW combined cycle power plant consisting of two General Electric (GE) Frame 7FA combustion turbine-generators (CT), each with its own Vogt-NEM heat recovery steam generator (HRSG), and a single GE steam turbine-generator (ST). In this standard 2 × 1 configuration, each CT generates power and exhausts directly into its own HRSG where the exhaust heat is captured and generates steam for use in the ST. The exhaust steam leaves the turbine and is condensed for reuse in an air cooled condenser. Air emissions are controlled through the use of Dry Low Nitrogen Oxide (NO_x) combustion coupled with Selective Catalytic Reduction (SCR) systems. For each HRSG, two catalyst systems are used to reduce NO_x, carbon monoxide (CO), and Volatile Organic Compound (VOC) production. Additionally, GGS is equipped with two capacity enhancing technologies to improve output during peak generation periods including a chiller used to cool incoming air to the CTs and duct burners to increase steam production in the HRSGs resulting in increased ST output. The chiller and duct burners allow GGS to increase its output by approximately 50 MW.

A Long-Term Service Agreement (LTSA)[1] for the CTs and ST is provided by GE. PG&E and GE entered into this agreement on December 12, 2008. This LTSA replaces the previous LTSA that was transferred from the previous owner of the facility to PG&E. The LTSA

[1] LTSAs are also known as Contractual Services Agreements.

provides for the maintenance of the combustion turbines (CT) and ST at GGS.

Commission Decision 06-06-035, as modified by Resolution E-4054, approved the acquisition, construction and operation of GGS.[2] In Decision 06-06-035, the Commission found that GGS was a low-cost and low-risk project that meets PG&E's long-term procurement needs and that will provide an additional 530 MW of electricity that will contribute to grid reliability.[3] The decision further approved the initial revenue requirement for GGS including its capital and operations and maintenance costs.

GGS was the first new power plant built by PG&E in nearly 20 years, achieved commercial operations a month ahead of schedule and without a lost-time injury in almost 1.8 million hours of work. The commercial operations date for GGS was January 4, 2009. PG&E expects that GGS will be a valuable load-shaping resource that will provide ancillary services required to maintain electric grid stability.

2. Colusa Generating Station

PG&E's CGS is a 530 MW combined cycle power plant consisting of two GE Frame 7FA CTs, each with its own HRSG, and a single GE ST. In this standard 2 × 1 configuration, each CT generates power and exhausts directly into its own HRSG where the exhaust heat is captured and generates steam for use in the ST. The exhaust steam leaves the turbine and is condensed for reuse in an air cooled condenser. Air emissions are controlled through the use of Dry Low NO_x combustion coupled with SCR systems. For each HRSG, two catalyst systems are used to reduce NO_x, CO, and VOC production. Additionally, CGS is equipped with two capacity enhancing technologies to improve output during peak generation periods including an evaporator used to cool incoming air to the CTs and duct burners to increase steam production in the HRSGs resulting in increased ST output. The evaporator and duct burners allow CGS to increase its output by approximately 127 MW.

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[2] Gateway Generating Station was formerly known as Contra Costa 8 (CC8).

[3] Decision 06-06-035, Findings of Fact 10.

A LTSA for the CTs and ST will be provided by GE. PG&E and GE entered into this agreement on December 16, 2008.

CGS was originally approved by the CPUC in Decision 06-11-048. This decision approved the initial revenue requirement for CGS including capital and O&M costs. As initially approved, CGS was to be developed and built by a third party under a purchase and sale agreement and, once completed and performance-tested, delivered to PG&E for PG&E to own and operate as a utility asset subject to cost of service ratemaking. After the third party informed PG&E that it had decided to exercise its contractual rights to terminate the Purchase and Sale Agreement (PSA), PG&E executed an agreement with the third party to acquire the assets and permits related to CGS. PG&E then filed an application with the CPUC to request a Certificate of Public Convenience and Necessity (CPCN) to construct CGS. Commission Decision 08-06-012 approved the CPCN to construct CGS that was contingently granted by Decision 08-02-019.

CGS is currently under construction and is expected to be commercially operational in November 2010.

3. Humboldt Bay Generating Station

The HBGS will replace the existing HBPP that has been operating since 1956. Due to electric system reliability requirements, the existing HBPP will need to remain in operation until the commissioning of HBGS is completed.

The new HBGS will be a 163 MW reciprocating engine power plant consisting of 10 Wartsila 18V50 DF natural gas fired reciprocating engines.[4] Each engine has 18 cylinders, each with a bore of 50 centimeters, and operates at 514 revolutions per minute. Each engine is designed to run on natural gas with 1 percent of total fuel input provided by low sulfur diesel as the pilot fuel. The engines are also designed to run on low sulfur diesel or biodiesel. Each engine is equipped with a separate independent closed loop cooling system. Emission control will be accomplished through the use of SCR.

[4] HBGS was initially known as Wartsila Humboldt or the Humboldt Project.

Decision 06-11-048 granted PG&E's request for a CPCN for HBGS including its initial revenue requirement including capital and operations and maintenance costs.

HBGS is currently under construction and is expected to be commercially operational in July 2010.

4. Existing PV Generation Facilities

PG&E owns three small PV facilities that are located in San Francisco, at AT&T Park and near PG&E's San Francisco Service Center.[5]

PG&E's AT&T Park PV Facility is located at 24 Willie Mays Plaza in San Francisco and was put into service in 2007. There are three PV generation systems at AT&T Park. The first system is installed on the Port Walk adjacent to McCovey Cove, the second system is installed on the roof structure over the Willie Mays ramp, and the third system is installed on the roof of the executive office building. These three systems consist of 578 PV modules rated at 208 watts each. These modules supply power to eight inverters located in the Park's main electrical room that convert the Direct Current (DC) power to Alternating Current (AC). The output from the three PV systems at AT&T Park is fed on to PG&E's electrical distribution system. The total system is rated at 110 kilowatt (kW) AC.

PG&E's 2180 Harrison Street PV Facility in San Francisco was put into service in 2007. There are three PV generation systems at the Harrison Street facility. The first system is installed on the roof of the building, the second system is installed on the upper façade of the building, and the third system is installed on the lower façade of the building. These three systems consist of 368 PV modules rated at 208 watts each. These modules connect to nine inverters that convert the DC power to AC and provide up to 70 kW AC to PG&E's electrical distribution system.

PG&E's 2270 Folsom Street PV Facility in San Francisco was put into service in 2007. This facility consists of 24 tracker arrays with 24 PV modules rated at 215 watts per array. Each of the tracker arrays connect to

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[5] PG&E has not included the forecast for its planned 250 MW of PV Utility-Owned Generation Program in this GRC since it is handled separately in A.09-02-019.